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AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF

A new look, the start of a new age

The staff of LANDSCAPE MANAGEMENT presents this issue with a great deal of pride. It's the flagship of a new-look magazine with new directions.

You've noticed by now that the changes begin with the cover. But they don't end there. If you flip through the pages of this month's LANDSCAPE MANAGEMENT, you'll get a much, much different "feel" from the magazine than you have in the past. These changes are the culmination of 10 months of intensive research and internal staff policy and design conferences.

They come as a direct response to reader preferences, voiced in a massive study conducted earlier this year. More than 300 of you were involved in telling us what you most like about your favorite trade magazines.

What did you tell us?

You said you want shorter articles. So we're giving you 16 shorter features this month, and at least as many each coming month.

You said you'd rather look at charts and graphs than take more time to wade through long prose. So we're including 15 charts, tables and graphs this month—with more in months to come.

You said you like more hands-on material that you can use in your everyday jobs. So we've changed the whole focus of the magazine away from massive technical articles and company profiles to comply with your wishes.

What you'll be reading from now on will be a combination *USA Today*, *Business Week* and the "old" LANDSCAPE MANAGEMENT. In short, we've changed what you wanted us to change—but we've kept the good parts.

Thanks to your input, the bulk of our articles will address the problems of landscape contractors, golf course superintendents, lawn care operators and recreational facility managers. But even if you don't fall into one of those four target job classifications, we believe that the information contained on these pages will still help your organization operate more efficiently.

Beginning this month, we'll feature four pages devoted strictly to the lawn care segment of the green industry with a four-page "Lawn Care Industry" section. And we're also proud to announce that Ron Hall, an old friend who is former editor of *Lawn Care Industry* magazine, is rejoining our staff as senior editor. Ron has been involved in green industry matters for four years, so his experience is a welcome addition.

Another change that may not be quite as evident to the average reader is a change in type size. We're down-sizing from 10- to 9-point type, so that we'll be giving you a minimum of 11 percent *more* information with each issue.

We've undertaken these changes as a re-investment in the industry. We've been around for more than 30 years now—more than almost any other magazine you might receive. Our goal is to give you, the loyal reader, the best possible product. We want to make LM the most oft-quoted, most talked-about and most reliable information vehicle in the industry.

We're proud of our changes, yet we realize that nothing's perfect.

We'll continue to rely on your opinions and preferences as we formulate upcoming issues. So next time you see us at one of the trade shows, stop and tell us how you like (or, heaven forbid, don't like) our new format. Better yet, drop us a line.

Jerry Roche

Jerry Roche
Editor-in-Chief

JOHN DEERE
162
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LANDSCAPE MANAGEMENT

INCORPORATING LAWN CARE INDUSTRY

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ASK THE EXPERT

DR. BALAKRISHNA RAO

Wood chips and termites

Problem: Could hardwood chips placed around shrubs near the foundation of a house become a source of termite infestation? *(New Jersey)*

Solution: We are aware of one report that termites infested large bark nuggets. The report did not mention whether these were subterranean or drywood termites. It is highly unlikely, however, that the subterranean termites found in your area would infest the wood chips generated by a chipper. Subterranean termites need warm air and moist conditions to survive.

If the shrubs are infested, there is a remote possibility that termites could be moved through the chips. However, if only worker termites are present and no queen, the population will not increase.

Reports indicate that there is a potential injury from the use of fresh wood chips. Fungi and bacteria use nitrogen from fresh wood chips. This affects the nitrogen-to-carbon ratio, resulting in nitrogen depletion. Fresh wood chips release several phenolic compounds and acids as they decompose which can be detrimental to root systems.

If you are intending to use fresh wood chips, use a very thin layer, no more than two to three inches thick. Composted products are better in the long run.

Removing herbicide stains

Problem: We have a problem in which cars, aluminum siding and driveways are stained due to drift from pendimethalin (Scott's Weedgrass Control 60 WP or Lesco's Pre-M 60D9). We have also had incidents of stained furniture, linoleum and carpeting from product tracked in by the kids or the dog. How is the stain removed? *(Michigan)*

Solution: Pre-M pre-emergence herbicide contains pendamethalin, which is a dinitroanaline. This is a group known to stain. The staining from Pre-M is difficult to remove. If non-target areas are sprayed or contaminated, rinse the surface immediately with water to prevent the stain from setting.

According to product development personnel from Lesco O.M. Scotts, and the basic manufacturer, American Cyanamid, there is no easy way to remove the stain. The following information should help:

STAINS ON POROUS SURFACES (unwaxed linoleum, fabric, carpets)

- If exposed to sunlight the color will fade in two to six weeks.
- For quicker results, consider using soap and water or an ammonia-based household cleaner within two hours.

STAINS ON NON-POROUS SURFACES

- If the stain has set, you could try a rubbing compound (the kind that is used on car paint touch-ups).
- If the stain has set, it is difficult to remove.
- Ammoniated household cleaner within two hours.
- Tanning lamp may eventually "bleach" the stain away.
- Magnum stain remover *may* work.
- Midco FL-85 (3 parts water/1part FL-85); two to three applications may be necessary.

STAIN REMOVERS

Magnum (Spectrum Technologies): A citrus-based solution which probably won't damage the treated surface.

Midco FL-85 cleaner/degreaser: This is a heavy-duty engine solvent. Midco's FL-85 can be diluted from 10 parts water and 1 part FL-85 to 3 parts water and 1 part FL-85, depending on the surface to be cleaned and the severity of the stain.

FL-85 dilution rates for cleaning different materials

Material	Dilution Rate (Water: FL-85)
concrete	7:1
fiberglass tanks	4.1
aluminum	3.1
cloth *	3:1

* Two to three applications are necessary

Please note: FL-85 at higher concentrations has the ability to remove finishes from surfaces. A 3:1 dilution will remove the finish from linoleum. Our tests also indicated that FL-85 at higher concentrations may dissolve certain types of plastic materials. You may want to test the product on a small area of the surface to be cleaned before it's applied to larger areas.

The best results were obtained when diluted FL-85 was applied using a hand sprayer. Allow about five minutes for the cleaner to penetrate the stain, scrub with a soft bristle brush and then give the surface a clean water rinse. Stubborn stains take two or more applications.

FL-85 is a solvent-type cleaner. Using gloves and cleaning in a well-ventilated area is recommended. Likewise, FL-85 may injure plant material. If FL-85 will potentially come in contact with plant material, thoroughly dilute (rinse) the solution after cleaning.

Treating for spittlebugs

Problem: We see frothy looking things on a number of pines. Are they spittlebugs? *(Michigan)*

Solution: Based on the description of the problem, it appears to be related to spittlebug insect activity.

To manage this pest, treat the pines when bugs appear and spittle mass is evident, usually about May to July. Insecticides such as Orthene, Dursban, Sevin, Turcam or Tempo can be used. Read and follow label specifications for good results.

Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to ASK THE EXPERT, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

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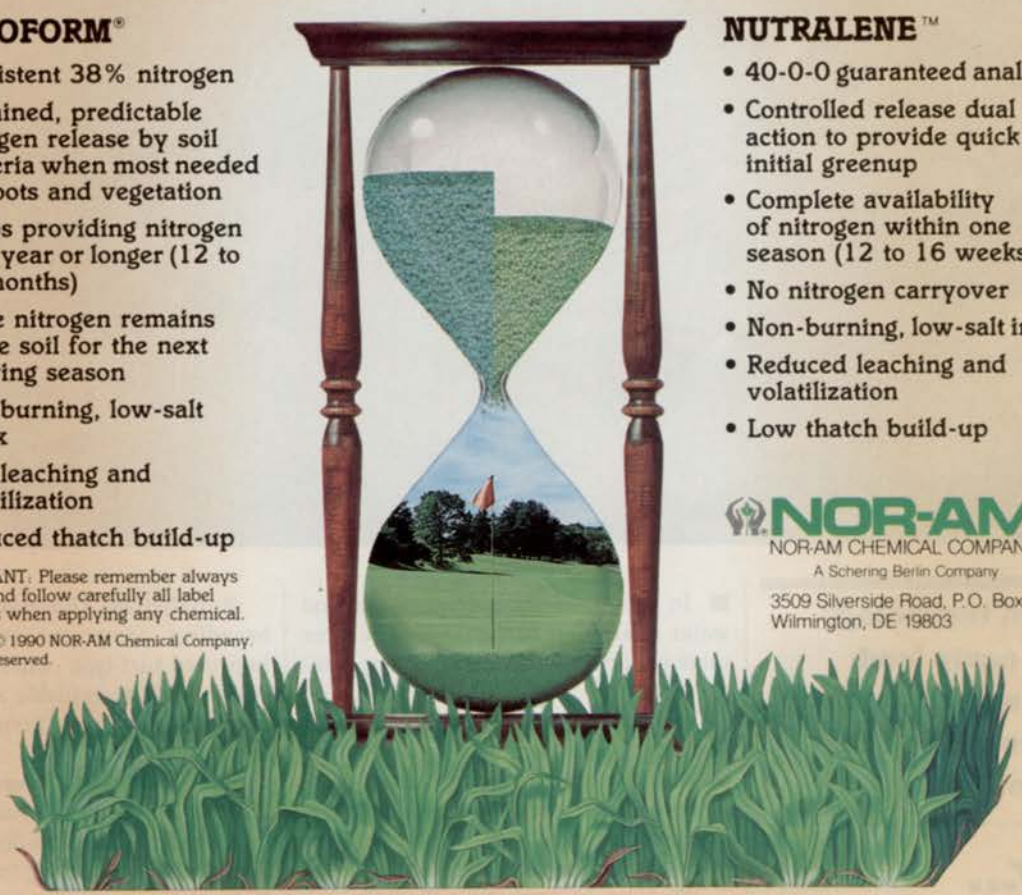
- Reduced thatch build-up



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- Controlled release dual action to provide quick initial greenup
- Complete availability of nitrogen within one season (12 to 16 weeks)
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IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical.

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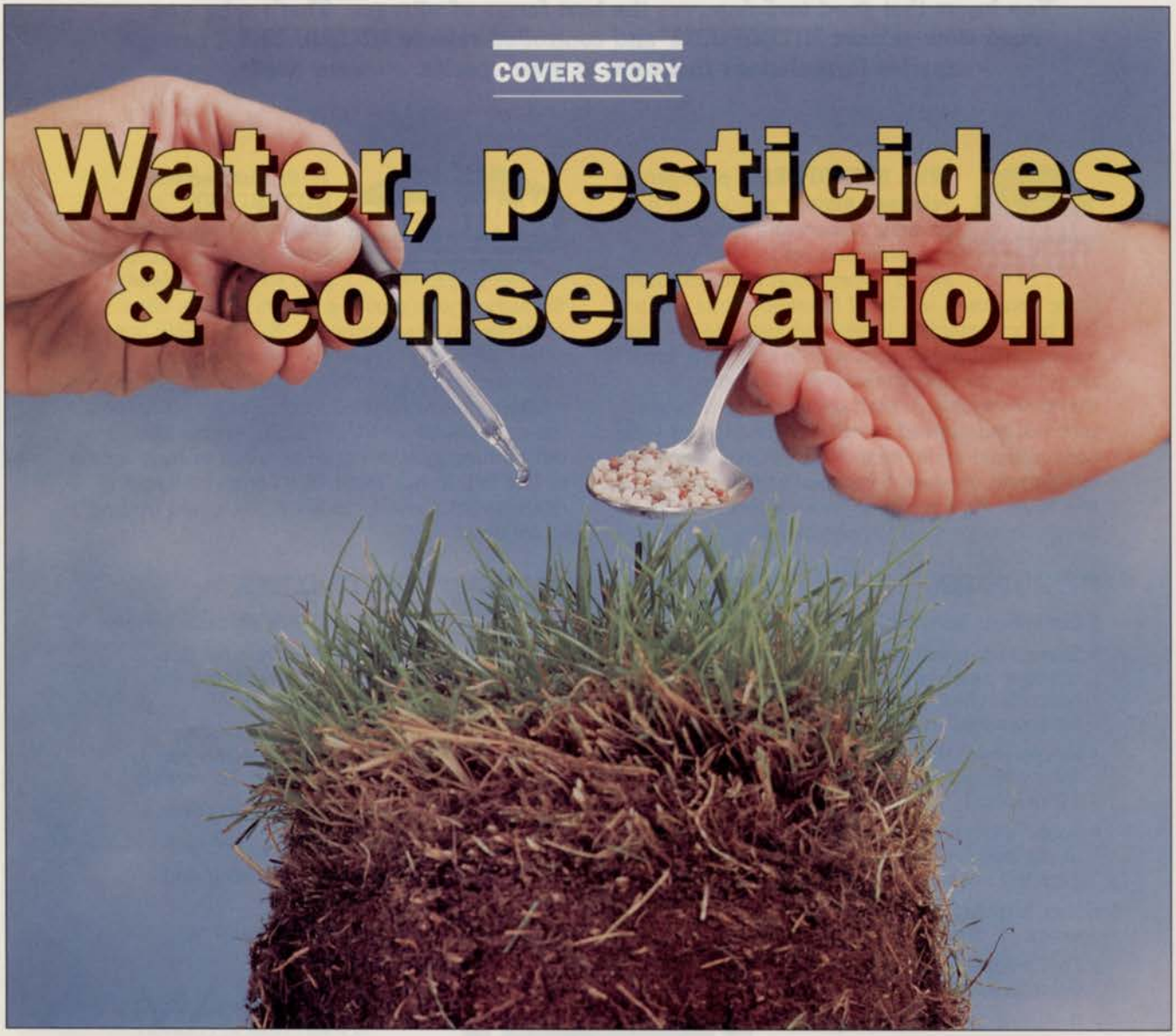
LANDSCAPE MANAGEMENT

COVER STORY

Water, pesticides & conservation



Advances in technology will better equip landscape managers to deal with the 'Decade of the Environment.'

Water...

by David Kopec, Ph.D., University of Arizona

■ In the 1990s, water conservation and water quality on turfgrass will become more important issues for landscape managers.

In some areas of the country like the Southwest, legislators have set limitations on water allocations for turf. With increased water rates, too, turfgrass irrigation becomes an extremely costly line item in a management budget.

What can be done about the high cost and "visibility" of maintaining turf?

1. New/alternative grasses, like buffalograss, are being developed.

Buffalograss *(Buchloe dactyliodes)* breeding programs are unleashing improved turf-type cultivars. The initial releases will be available as sod or plugs, much the way hybrid bermudagrasses are established.

Buffalograss has a lower water requirement than Kentucky bluegrass, and has thus survived in the low desert areas of the Southwest. It is starting to be used in the Midwest and South Central states in low-traffic areas.

Also, other native grasses may potentially be used as low maintenance, low

water-use turf species. These include some of the grama grasses (side oats, blackgrama and bluegrama), some of the lovegrasses, and curly mesquitegrass *(Hilaria belangeri)*. Turf-type selections of the latter are being evaluated to see if superior characteristics can be passed on to future generations through seed. This grass is adapted to Texas, New Mexico and Arizona.

2. New irrigation systems have been designed to irrigate turfs more precisely, with less waste. They also offer excellent record-keeping, thanks to micro-chip technology.

Compared to the mechanical clocks used in the past, solid state controllers offer greater versatility in start/stop features and irrigation scheduling options. Some even offer plug-in, plug-out storage chips, which record irrigation station run times for permanent water use records. Many of the new controllers can be hooked up to soil moisture sensors and rain or wind switches.

Weather station networks in many states can provide turfgrass growers with estimates of turfgrass water use based on local weather conditions. Weather stations can calculate a daily atmospheric demand for water, called a reference ET (Ref-ET).

Local researchers can mathematically adjust the Ref-ET value for turfgrass water use. That value can then be used to determine how much to irrigate.

Weather networks are available through the university system. Check with the Division of Cooperative Extension in your state to see if an "ET" program is available.

Irrigation companies now offer weather station and controller packages which calculate the Ref-ET from conditions on the golf course, and then apply irrigation based on the previous day's ET. Added features include flexibility in irrigation scheduling (days on/days off), irrigation amounts (relative to the Ref-ET), automatic data storage, and multiple start/stop cycles which can help prevent further runoff or puddling.

3. Using secondary water is becoming more popular because the use of potable water for landscape irrigation is becoming a sensitive issue—even in places where water supplies are plentiful. This makes a lot of sense since there are generally large amounts of effluent produced daily, and turf is an efficient filter of effluent.

Logistics of having large turf facilities next to water treatment stations need to be worked out to keep costs practical. Users need to be aware that the suitability of the irrigation water can be determined by a water quality test.

4. Xeriscaping involves five or six principles using landscape plants and groundcovers for water conservation, energy savings, or both. Water catchments, tree and shrub placements for shading and protection, and the selective use of plant materials are part of the program.

Xeriscaping is being developed even in areas which receive large amounts of rainfall.

Original concepts in xeriscape programs called for eliminating turfed areas. But research should be conducted to determine if actual water use of trees in mesophytic or xeriphytic settings have a lower requirement (on a ground basis area) than turfs.

My guess is, some will and others will not.

Pesticides...

by Roch E. Gaussoin, Ph.D., University of Nebraska

■ Many successful landscape operations use pesticides as a necessary component of their programs.

With the 1990s being called "The Decade of the Environment," people in the industry are apprehensive about where pesticides will fit. Yet many indicators point toward a landscape industry which includes continued, though more conscientious, pesticide use.

One aspect of Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) amendments passed in 1988 is the re-registration of most pesticides. Manufacturers, in addition to new data acquisition, are required to pay a fee to the EPA for re-registration. So it is reasonable to expect that some of the "older" chemicals now available for turf and ornamentals might not survive the re-registration process. The end result will be fewer, but safer, pesticides.

Some future considerations and how they relate to pesticide use:

1. Signs cautioning consumers of a pesticide application are becoming a common sight all over the country. Posting treated lawns is law in eight states, with more possible in the not-too-distant future. It is here to stay; applicators may want to consider posting at their location *before* it becomes mandatory.

Although pre-notification of pesticide-sensitive individuals is law in only one state (Maryland), many states are considering such legislation. This legislation, if passed, would require the notification of individuals who claim to have had allergic reactions to pesticides.

2. Applicator training requirements will probably become more strict. Requirements to become a certified pesticide applicator may involve more frequent and rigorous testing and/or training. Individuals applying pesticides under the direct supervision of certified pesticide applicators may also be required to undergo documentable and verifiable training exercises.

3. Ground and surface water contami-

Monsanto markets a closed application system called Expedite, a backpack sprayer with pre-mixed pesticide containers.

nation and the environmental fate of pesticides will continue to be an important topic. Current research results indicate that application of pesticides to turf may not be detrimental, and—under certain circumstances—actually protect groundwater sources. The United States Golf Association (USGA) has committed over a million dollars for environmental fate research to be conducted in the early '90s.

David Kopec (left), Roch Gaussoin (center) and John Doyle during the Nebraska Turfgrass Conference, at which they gave the speeches these articles are taken from.

4. New technology has or is being developed to make pesticide applications safer for humans and the environment. Most chemical companies have divisions or sections solely to target the turf and ornamental market, resulting in products becoming available for use much faster.

Pesticide formulation and packaging has resulted in products which are safer to handle and apply. Many companies package pesticides in pre-measured water soluble packages which dissolve in the spray tank. Not only does this eliminate measurement errors and exposure to the undiluted pesticide, but it solves the problem of pesticide container disposal.

Dry flowable and water dispersible granule (WDG) formulations are also becoming more prevalent. Dry formulations do not contain organic solvents, which can reduce phytotoxicity and odor problems as well as eliminate a potential fire hazard.

Pesticides are also being developed which are less toxic and can be used at lower rates than their predecessors. The net benefit for both the applicator and the environment is obvious.

Other developments which should prove beneficial to the continued use of pesticides include closed delivery systems and returnable pesticide containers. Monsanto markets a closed application system called Expedite, a backpack sprayer with pre-mixed pesticide containers. Applicator exposure is minimized and calibration is simplified. DowElanco has small volume returnable containers (SVRs) which can be returned to the distributor to be refilled. This approach could help alleviate part of the solid waste disposal problem.

5. Integrated Pest Management (IPM) will become more refined in the future, with pesticides.

Though pesticides, either biological or chemical, will continue to be an integral component in most landscape systems, some changes in how business will be done is inevitable.

Steps landscape managers must consider taking to respond to the market are:

- Stay informed about pesticide risks and benefits and convey this information to clients and other appropriate audiences. Seriously consider joining community associations or non-extremist environmental groups, and become involved in the political process.
- Because product availability, due to the re-registration process, may be questionable, be well trained and informed about industry developments. This will require joining regional and national organizations and attendance at university conferences and field days and industry trade shows.

The outlook for continued pesticide availability is good. It becomes the responsibility of the landscape manager to adhere to federal and state regulations, apply pesticides correctly and judiciously, and be conscious of the environment.

Fertilizers...

by John M. Doyle, Ringer Corp.

■ Glancing into the crystal ball at the future of turfgrass fertilizers is not easy. Who would have predicted 10 years ago that environmental issues would play a significant role in shaping management practices?

However, here are issues to consider:

1. Public perception concerning fertilizers and the environment is being shaped by information such as the EPA drinking water survey.

The results of the study revealed nitrate contamination in 52.1 percent of community water systems and 57 percent of rural domestic wells. Even though the EPA has not yet determined how much nitrate contamination can be traced to fertilizer use, this information still raises concern among the general public about turf fertilizers.

Issues concerning pesticides have spilled over as concern about exposure to fertilizers. Other issues gaining in public awareness are the closing of landfills or the restriction of materials that can be dumped.

Natural resources like water are no longer generally looked at as "renewable," so modifications in water use will have an effect on the nutritional management of turf.

2. Changes in product technology and management systems are imminent as understanding of plant growth systems increases. Turf managers will become more reliant on data concerning the turf growing environment. Turf management will become more of a science and less of an art.

For instance, in the last 20 years, fertilizer sources have changed from ammonium nitrate and urea to slow-release sources such as various coated ureas and urea formaldehyde reaction products.

3. Synthetic organic fertilizers engineered with turf management practices in mind will continually be developed. For example, recently-released materials provide a season's entire nutritional program in one spring application. Also, fertilizers will have release characteristics specifically based on the growth and development demands of turf. The release patterns of these materials will be more predictable.

With all the environmental pressures the industry is dealing with, public perception still holds that "organic" is safe. This will definitely have an impact on the market, especially the homeowner, as to what types of products are in demand.

Familiarity of materials listed as nutrient sources on packaging (bone meal, blood meal, etc.) also offers relief to consumers about the safe handling of materials.

As a nitrogen source, natural proteins provide slow-release, non-burning nutrition to turf. There exist numerous materi-

"Where else could you find a truck that saves enough to make its own payments?"

On top of that, Scott Nolen of Truly Nolen says "In total operating costs, my economical Isuzu trucks save an additional three and a half percent. They deliver fuel and maintenance savings that are unbelievable.

"We're the nation's largest family-owned lawn care and pest control company. Four years ago we began switching over our fleet of lawn care trucks. It's now 97% Isuzu Truck.

"The Isuzu low-cab-forward trucks have outstanding visibility and turning radius. Driving the other trucks was very tiring. Now it's not as much a physical job as it once was. So any of our drivers can handle it.

"We're not the only lawn care business using Isuzu NPRs. In this competitive market, about seven out of ten trucks are Isuzus.

"And now we're beginning to use Isuzu trucks for fumigation, too. Our new 13,250 lb. GVW fume truck with its all-aluminum bed is the best match of truck and body I've ever seen in the pest control industry."

To find out where you can get a truck that saves you money and performs like this, call (800) 255-2550 for the location of your local Isuzu Truck dealer.

Works for Scott.

ISUZU
TRUCK

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als that have not been evaluated or even discovered yet that may have a good fit as turf fertilizers.

4. Recycling of organic residues will provide new products in the future. There are currently thousands of tons of finished municipal compost piles with nowhere to go—but with the potential to become nutrient-rich, slow-release liquid fertilizers. As long as oil prices keep rising, so will the price of petroleum-based fertilizers, causing the use of organic residues and other materials in the waste stream to become more economically appealing as turf nutrient sources.

5. Computer technology will allow turf managers to more accurately predict levels of fertilizer to be applied, based on the measured rate of nutrient use in the soil during the growing season.

6. Methods of application will constantly be improved to maximize availability and longevity of nutrient uptake. Foliar application technology will allow spoonfeeding, reducing the potential impact on the environment by minimizing exposure to leaching and/or volatilization conditions. As irrigation systems improve their accuracy, the opportunity to reduce fertilizer application costs through fertigation grows. Granular product application methods have also constantly been improving.

7. Combination products have a fit for the future as well: combinations such as fertilizer with plant growth regulators that could control uptake, storage and use of nutrients within the plants. Soil organism inoculants could be another, or perhaps the addition of a nitrogen fixing bacteria that would colonize the rootzone and be able to turn atmospheric nitrogen into a form that the plant can use.

8. Soil testing will definitely become a more common practice in turf management. Information generated regarding the levels of nutrients needed at different stages of the growth cycle will help turf managers specify more accurate quantities and ratios of fertilizers.

9. Better service. Fertilizer companies will become even more responsive to the individual turf manager's needs, such as providing a greater ability to deliver custom blends, expedited delivery, etc. Sales representatives will also achieve a higher level of expertise, offering more product information and turfgrass management.

The future is difficult to predict, but there is one aspect that we can surely look forward to favorably: Information, products and service will make the job of managing turf an even more rewarding one.

LM REPORTS

Seed: Production exceeds demand

A bumper crop of turfseed, combined with decreased demand, means good prices for those buying turfseed this year.

■ Heavy rain and cool weather during much of May and June resulted in a late West Coast turfseed harvest. On a positive note, the harvest was a good one, with some companies reporting surpluses for select species.

The cool spring/early summer weather was called a first by some in the seed industry, and caused crops to come in about two weeks late, depending on the species.

Fine fescues were reported as experiencing a slight imbalance between supply and demand, light, with production giving way slightly to a higher demand for hard fescues.

It's also a good year for new varieties, with companies reporting numerous new offerings. (See story on page XX.)

Tall and fine fescue yields were considered to be below average, with yields varying, depending on the region. In the southern valley near Albany, Ore., tall fescues were reported as no more than average.

Bentgrass yields appeared to be about average.

Yields for common Kentucky bluegrass were down a bit. Prices for common were also down between 10 and 20 cents per pound.

Prices for creeping red fescue and common bluegrass are up. Creeping red fescue acreage in Canada is down, and common Kentucky bluegrass is feeling the effects of last year's sell-out and the fact that farmers last year plowed out much of their bluegrass acreage.

Conditions are reported to be "ideal" for fall planting.

SEED AVAILABILITY ESTIMATES, 1991-92

The following information is based on surveys conducted in July-August, 1991. Supply and price estimates may have changed since publication.

(A=Surplus/B=Adequate/C=Limited)

BENTGRASS

Variety	Marketer	Supply	Price
Carmen	Vander Have	B	Stable
Dominant blend	Seed Research	B	
Exeter (colonial)	Pickseed West	C	Stable
National	Pickseed West	B	Stable
Penncross	Lesco/Northrup King/ Tee-2-Green/Roberts Seed	B/A/B/B	Stable
Penneagle	Lesco/Northrup King/ Tee-2-Green	B/A/B	Stable
Pennlinks	Lesco/Northrup King/ Tee-2-Green	B/A/B	Stable
Pennway	Lesco/Tee-2-Green	B/B	Stable
Prominent	Seed Research	C	Stable
Providence	Seed Research	B	Stable
Putter	Jacklin Seed Co.	B	Lower
Reston (red top)	Pickseed West	B	Lower
SR 1020	Seed Research	B	Stable
Southshore**	Lofts Seed, Inc.	C	Stable
Tracenta	Van Der Have	B	Stable
V.I.P. blend	Turf Merchants	B	Stable to Lower

KENTUCKY BLUEGRASS

Variety	Marketer	Supply	Price
Adelphi	J&L Adikes/Northrup King Jacklin Seed Co.	B/A/B	Stable
Alpine	Pickseed West	n/a	n/a
American	Pickseed West	C	Higher
Amazon	Jacklin Seed Co.	C	Stable
Argyle	Roberts Seed Co.	B	Stable
Aspen	Northrup King	A	Stable

More than 30,000 acres have been plowed in the Albany, Ore. area, as there are not many new tall fescue contracts being made with farmers. Consequently, more of that acreage could be used next year for wheat, rye or annual ryegrass.

Some comments solicited from seed professionals, on the state of this year's harvest:

Turf-type tall fescues: Production exceeds demand for the time being. "That is in part due to the reduced consumption in California due to lack of sod sales as well as general slump in economy nationwide...surplus is likely to exist for another growing season," says Art Wick of Lesco.

"...better than ever, as far as supply and quantity are concerned," says Mark Grundman of Northrup King/Medalist.

"Your customers will see some good prices this fall," adds Dr. Jerry Pepin of Pickseed West, Inc.

Perennial ryegrass: "The crop was good. Inventories are high. The newer varieties of the dwarf, slower growing dark green varieties such as Legacy and Assure continue to be in moderate supply with many of the unique, high endophyte varieties being in similar condition," notes Wick.

Mike Robinson of Seed Research reports lower prices on perennial ryegrass and tall fescue.

And Grundman says,"The anticipated harvests look good, but some isolated cases of winter kill and chemical damage may limit some varieties this year."

Fine fescue: Lesco reported its crop as "moderate."

"Inventories seem to be reasonable, do not expect any tremendous change in the fine fescue availability with the 1991 crop," reports Wick.

Hard fescue: Ray Brubakken of Van Der Have Oregon expects a sell-out of hard fescue. "Demand is growing, and prices may increase as spring '92 approaches," says Brubakken.

Kentucky bluegrass: Turf Seed, Inc. reports that Midnight and Blacksburg Kentucky bluegrasses have again topped the National Trials, resulting in high demand for those varieties.

—Terry McIver

KENTUCKY BLUEGRASS *(cont.)*

Variety	Marketer	Supply	Price
Aquila	Northrup King	C	Stable
Banff	Pickseed West	B	Stable
Baron	Lofts Seed Inc.	B	Lower
Blacksburg	Turf Seed, Inc.	C	Higher
Bronco	Pickseed West	B	Stable
Challenger	Turf Seed, Inc.	B	Stable
Chateau	Fine Lawn Research, Inc.	B	Lower
Classic	Jacklin/Peterson	B	Lower
Crest	Pickseed West	B	Stable
Columbia	Turf Seed, Inc.	B	Stable
Dawn	Lesco	B	Stable
Eclipse	Jacklin	B	Stable
	Peterson	B	Lower
	Zajac	C	Lower
Estate	Roberts Seed Co.	B	Stable
Freedom	Northrup King	A	Stable
4 Aces**	Turf Seed, Inc.	C	Stable
Fylking	Jacklin Seed Co.	B	Stable
Georgetown	Lofts Seed ,Inc.	B	Lower
Glade	Jacklin Seed Co.	B	Stable
Haga	Burlingham	C	Stable
Harmony	Seed Research	C	Lower
Huntsville	Jacklin Seed Co.	B	Stable
1757	Lofts Seed, Inc.	C	Stable
Indigo	Pickseed West	C	Higher
Julia	Lesco	B	Stable
Kelly	Northrup King	A	Stable
Kenblue	Jacklin Seed Co.	B	Stable
Liberty	Zajac	B	Lower
Marquis	Roberts Seed Co	B	Stable
Merion	Jacklin Seed Co.	B	Stable
Midnight	Turf Seed, Inc.	C	Higher
Monopoly	Peterson	B	Lower
Mystic	Lofts Seed, Inc.	C	Stable
Nassau	Lofts/Jacklin	B	Lower
Newport	Jacklin Seed Co.	B	Stable
Nugget	Pickseed West	n/a	n/a
Nu Star**	Jacklin Seed Co.	C	n/a
Park	Jacklin Seed Co.	B	Stable
Ram 1	Lofts/Jacklin	C/B	Stable
Rebel	Lofts Seed, Inc.	C	Lower
Rebel Jr.	Lofts Seed, Inc.	B	Lower
Rebel 3D**	Lofts Seed, Inc.	C	n/a
Rugby	Northrup King	B	Stable
	Roberts Seed Co.		
S-21	Jacklin Seed Co.	B	Stable
SR 2000**	Seed Research	C	Stable
SR 2100**	Seed Research	C	Stable
Shamrock**	Lesco	C	Stable
Suffolk	Lofts/Jacklin	B	Stable
Touchdown	Pickseed West	B	Stable
Trenton	Northrup King	A	Stable
Tribute	Lofts Seed, Inc.	B	Lower
Welcome	Seed Research	B	Lower

TURF-TYPE TALL FESCUE

Variety	Marketer	Supply	Price
Advent**	Jacklin Seed Co.	B	Stable
All*Star	Jacklin Seed Co.	B	Lower
Amigo	Northrup King	B	Lower
Arid	Jacklin/Northrup King	B/B	Lower
APM**	Jacklin Seed Co.	C	n/a
Apache	Turf Seed, Inc.	A	Lower

TURF-TYPE TALL FESCUE *(cont.)*

Variety	Marketer	Supply	Price
Arriba**	Northrup King	B	Lower
Bonanza	Proprietary Seeds	A	Lower
Bonzai (dwarf)	Turf Merchants	B	Lower
Brahma	Roberts Seed Co.	B	Lower
Chieftan	Roberts Seed Co.	B	Lower
Cimarron	Lesco	B	Stable
Confederate**	Turf Seed, Inc.	C	Stable
Crew-Cut (dwarf)	Proprietary Seeds	B	Lower
Crossfire	Pickseed West	B	Lower
Eldorado	Turf Seed, Inc.	B	Lower
Emperor	Zajac	B	Lower
Falcon	Burlingham	B	Lower
Finelawn SGL	Fine Lawn Research	B	Lower
Finelawn 1	Fine Lawn Research	B	Lower
Finelawn Petite**	Fine Lawn Research	C	Stable
Galway	Northrup King	B	Lower
Guardian	Roberts Seed Co.	B	Lower
Jaguar	Zajac	B	Lower
Jaguar II	Zajac	B	Lower
Lancer**	Lesco	B	Stable
Leprechaun**	Roberts Seed Co.	C	Lower
Maveric II	Pickseed West	B	Lower
Maxim blend	Roberts Seed Co.	B	Lower
Mesa	Jacklin Seed Co.	B	Stable
Micro**	Turf Merchants	B	Lower
Mini-Mustang	Pickseed West	B	Lower
Monarch	Turf Seed, Inc.	B	Lower
Mow-Less**	Turf Seed, Inc.	C	Stable
Murietta	Turf Seed, Inc	B	Lower
Mustang	Pickseed West	B	Lower
MX-86	Jacklin Seed Co.	C	Higher
Olympic	Turf Seed, Inc.	B	Lower
Olympic II	Turf Seed, Inc.	B	Lower
Pixie**	Jacklin Seed Co.	C	n/a
Recycler**	Turf Merchants	C	Lower
Shortstop	Pickseed West	B	Lower
SR 5000	Seed Research	B	Stable
SR 5100**	Seed Research	C	Stable
SR 8200**	Seed Research	C	Lower
SR 8300**	Seed Research	C	Lower
Safari**	Turf Seed, Inc.	C	Lower
Sapphire**	Vander Have	A	n/a
Shenandoah**	Willamette	B	Lower
Silverado	Turf Seed, Inc.	B	Lower
Sundance (dwarf)	Turf Merchants	C	Lower
Survivor blend	Seed Research	B	Lower
Taurus (dwarf)**	Turf Merchants	C	Lower
Thoroughbred	Pickseed West	B	Lower
Thunderbird**	Burlingham	C	Lower
Titan	Seed Research	B	Lower
Tomahawk	Turf Seed, Inc.	C	Lower
Trailblazer II**	Lesco	B	Stable
Trailblazer	Lesco	B	Stable
Trident	Seed Research	B	Lower
Triathalawn	Turf Seed, Inc.	B	Lower
Trophy blend	Seed Research	B	Lower
Turf Gem	Turf Merchants	B	Lower
Turf Gem Jr.** (dwarf blend)	Turf Merchants	B	Lower

TURF-TYPE TALL FESCUE *(cont.)*

Variety	Marketer	Supply	Price
Twilight (dwarf)	Turf Merchants	B	Lower
Willlamette	Willamette	A	Lower
Winchester**	Burlingham	B	Lower
Wrangler	Jacklin	B	Lower
	Lesco	B	Stable
	TMI	B	Lower

FINE FESCUE

Variety	Marketer	Supply	Price
Dawson	Northrup King/ Vander Have	B/B	Stable
Estacada	Turf Merchants	C	Stable
Flyer	Fine Lawn Research	B	Lower
Hector**	Vander Have	B	Stable
Revere creeping**	Northrup King	B	Stable
Ruby creeping	Northrup King	A	Lower
Shademaster	Lesco	B	Stable
Silvestor	Vander Have	C	Stable
Virtus	Turf Merchants	B	Stable
Vista creeping**	Zajac	B	Stable

CHEWINGS FESCUE

Variety	Marketer	Supply	Price
Atlanta	Vander Have	A	Stable
Camaro**	Fine Lawn Research	C	Stable
Center	Turf Merchants	B	Stable
Dover**	Northrup King	B	Stable
Jamestown	Lofts Seed, Inc.	B	Lower
Jamestown II * **	Lofts Seed Inc.	B	n/a
Koket	Burlingham	B	Stable
Mary	Vander Have	B	Stable
Molinda	Vander Have	A	Stable
Shadow	Lesco	B	Stable
Waldorf	Vander Have	A	Stable
Wilma	Burlingham	B	Stable

HARD FESCUE

Variety	Marketer	Supply	Price
Atilla	Turf Merchants	C	Stable
Aurora	Turf Seed, Inc.	B	Stable
Aurora* **	Turf Seed, Inc.	C	Stable
Biljart	Vander Have	C	Stable
Eureka**	Fine Lawn Research	C	Stable
HF 9032**	Northrup King	C	Stable
Reliant* **	Lofts Seed, Inc.	B	Stable
Scaldis	Vander Have	C	Stable
Silvana	Seed Research	A	Stable
SR 3000	Seed Research	B	Stable
SR 3100**	Seed Research	C	Stable
Scaldis	Northrup King	B	Stable
Spartan	Lesco	B	Stable
Waldina	Vander Have	C	Stable

PERENNIAL RYEGRASS

Variety	Marketer	Supply	Price
Allaire**	Turf Merchants	B	Stable
Alliance blend	Turf Seed, Inc.	B	Lower
All*Star	J&L Adikes/ Northrup King	B/C	Lower/ Stable
Aquarius	Turf Merchants	B	Stable

PERENNIAL RYEGRASS *(cont.)*

Variety	Marketer	Supply	Price
Birdie II	Turf Seed, Inc.	C	Lower
Brenda	Vander Have	A	Lower
CBS blend	Turf Seed, Inc.	B	Lower
Caddie	Northrup King	C	Stable
Caliente	Willamette	A	Lower
Calypso	Roberts Seed Co.	B	Stable
Champion	Seed Research	B	Lower
Charger	Turf Seed, Inc.	B	Lower
Citation II	Turf Seed, Inc.	A	Lower
Competitor**	Burlingham	B	Lower
Cowboy	Lofts Seed Inc.	B	Lower
Dandy	Northrup King	B	Stable
Delray	Northrup King	B	Stable
Dimension	Vander Have	A	Lower
Envy**	Zajac	B	Stable
F.puccinellia	Northrup King	B	Stable
Goalie	Northrup King	B	Stable
Legacy**	Lesco	B	Stable
Manhattan II	Turf Seed, Inc. TMI	B C	Lower/ Stable
Manhattan II* **	Turf Seed, Inc./TMI	C/B	Stable
Mondial	Vander Have		
NK 89001**	Northrup King	C	Stable
Nomad**	Turf Merchants	C	Lower
Nova	Seed Research/ Vander Have	B/A	Lower
Omega II	Zajac	B	Stable
Palmer	Lofts Seed, Inc.	B	Lower
Palmer II* **	Lofts Seed, Inc.	C	n/a
Patriot II**	Turf Merchants	C	Lower
Pebble Beach*	Fine Lawn Research	B	Lower
Pennant	Burlingham	B	Lower
Playmate blend	Roberts Seed Co.	B	Stable
Prelude	Lofts Seed, Inc.	B	Lower
Prelude II* **	Lofts Seed, Inc.	C	n/a
Quickstart**	Turf Seed, Inc.	B	Lower
Ranger	Vander Have	A	Lower
Repell	Lofts Seed, Inc.	B	Lower
Repell II* **	Lofts Seed, Inc.	C	Stable
Riviera	Roberts Seed Co.	B	Stable
Rodeo**	Turf Merchants	B	Lower
Rodeo II**	Turf Merchants	C	Lower
SR 4000	Seed Research	B	Lower
SR 4100	Seed Research	B	Lower
SR 4200	Seed Research	B	Lower
SR 4300	Seed Research	C	Lower
Saturn	Zajac	B	Stable
Seville	Willamette	B	Lower
Stallion *	Fine Lawn Research/ TMI	B	Lower/ Stable
Sunrye 246	Turf Seed, Inc.	B	Lower
Target	Northrup King	B	Stable
Vantage	Proprietary Seeds	B	Lower
V.I.P. blend	Turf Mechants	B	Lower
Yorktown III * **	Lofts Seed, Inc.	C	Stable

**Contains endophytes*
***New variety*
[1] *Final year of production. To be replaced by Shademaster.*

Leadership by listening

■ To be a successful leader, you need the traits and characteristics of a leader and you have to emphasize skills that make leadership possible, says O.M. Scotts' Gerry Sweda.

Managing through leadership requires five character traits:

1) the ability to visualize—a clear idea of what you want to do;

2) the ability to communicate "the vision;"

3) the ability to make decisions and give directions;

4) the ability to do the right thing in the right way in the right amount of time;

5) and the ability to reward and recognize subordinates.

"Are they not all in the realm of possibility for all of us?," Sweda asks.

In order to attain these traits, the leader must first master four skills:

1) the skill of communicating;

2) the skill of interviewing (questioning your following);

3) the skill of listening; ("The most important and hardest to perform day in and day out," Sweda notes. "You must manage by wandering around and listening with your eyes.")

4) and the skill of negotiating (attaining a win-win situation for two parties).

WINCHESTER

TURF-TYPE TALL FESCUE

Semi-dwarf growing features

LESS MOWING, WATER & FERTILIZER

- SEMI-DWARF
- LESS MOWING
- LESS WATER
- LESS FERTILIZER
- PEST RESISTANT
- DISEASE RESISTANT
- ESTABLISHES FAST
- WEAR RESISTANT

"Winchester has always looked the best of all the plots."

"We've always experienced bad problems with Brown Patch with other varieties, (such as Rebel). The last thing I want is a customer complaining of Brown Patch. The Winchester showed no signs of disease activity."

Lee Mooring
Carolina Hortispray
Charlotte, North Carolina

For a difference you can take to the bank

"When we first planted Winchester next to KY-31 we were impressed with its quick germination and good looks. We were also amazed at how greeen it stayed, even in the winter."

"We noticed that Winchester wasn't affected by Brown Patch Disease unlike Rebel sod we planted earlier."

"Winchester does well in the sun, and the shade. We've had excellent results everywhere we've planted it."

Randy L. Sigg
Randy L. Sigg Landscape
Charlotte, North Carolina

MEAN TURFGRASS QUALITY RATINGS

WINCHESTER	5.9
LEGEND	5.5
TRIBUTE	5.4
JAGUAR II	5.3
REBEL II	5.2
MONARCH	5.1
PACER	5.1
AZTEC	5.0
TRIDENT	4.1

Test results compiled from 1987 National Tall Fescue test at Richmond, Virginia. Graphs shown are not complete results but selected varieties.

LESS MOWING

LESS WATERING

LESS FERTILIZER

LESS DISEASE

Circle No. 101 on Reader Inquiry Card

REBUILD OR REPLACE? — JUST THE FACTS —

Who: Landscape managers, lawn care operators, golf course superintendents, groundskeepers, motor pool supervisors.

What: Small engines (single cylinder, about 4-16 hp) for walk-behind mowers, aerators, dethatchers, overseeders, sod cutters and other smaller, powered landscape equipment.

When: Consistent engine trouble, lowered power output ("tired"), hard starting, excessive fuel consumption, smoky, spark plug "fouling," dead engine.

Why: Improved equipment performance, employee productivity, safety, client satisfaction.

How: Independent small engine repair/sales service; manufacturer sales and service, in-house staff.

REBUILD:

- Rule of thumb cost analysis: If cost of rebuilding less than roughly 50 to 60 percent of the cost of a new engine.
- If customers can be patient for delays or grounds can go unmaintained during time spent rebuilding.
- If you can "limp along" until the end of the season with less-than-efficient equipment until off-season repairs can be made in-house or at a price break outside.
- If exterior parts to be replaced are relatively simple operations: carburetors, throttle shafts, fuel pumps, electric starters are some examples.
- If interior parts to be replaced are easily handled with low labor hours: camshafts, valves, cam and crank shafts, ball and shaft bearings can be examples.
- If low depreciation calculations dictate the unit merits rebuilding.

REPLACE:

- Rule of thumb cost analysis: If cost of rebuilding is greater than 50 to 60 percent of the cost of a new engine.
- If estimated purchase and labor installing costs are within your operating, equipment and maintenance budget.
- If in-house staff has skills to install a new power plant. You may consider keeping a comparable extra engine in stock.
- If condition and depreciation of other parts of the gear (the mowing deck, for example) warrants a new engine.
- If you simply don't feel confident that rebuilding will resolve your problem for a profitable period of time.

Old engines: rebuild or replace?

Be sure to look at the whole situation before deciding whether to rebuild tired engines or buy replacements.

■ An immediate decision must be made when your favorite walk-behind mower "suddenly" blows an engine.

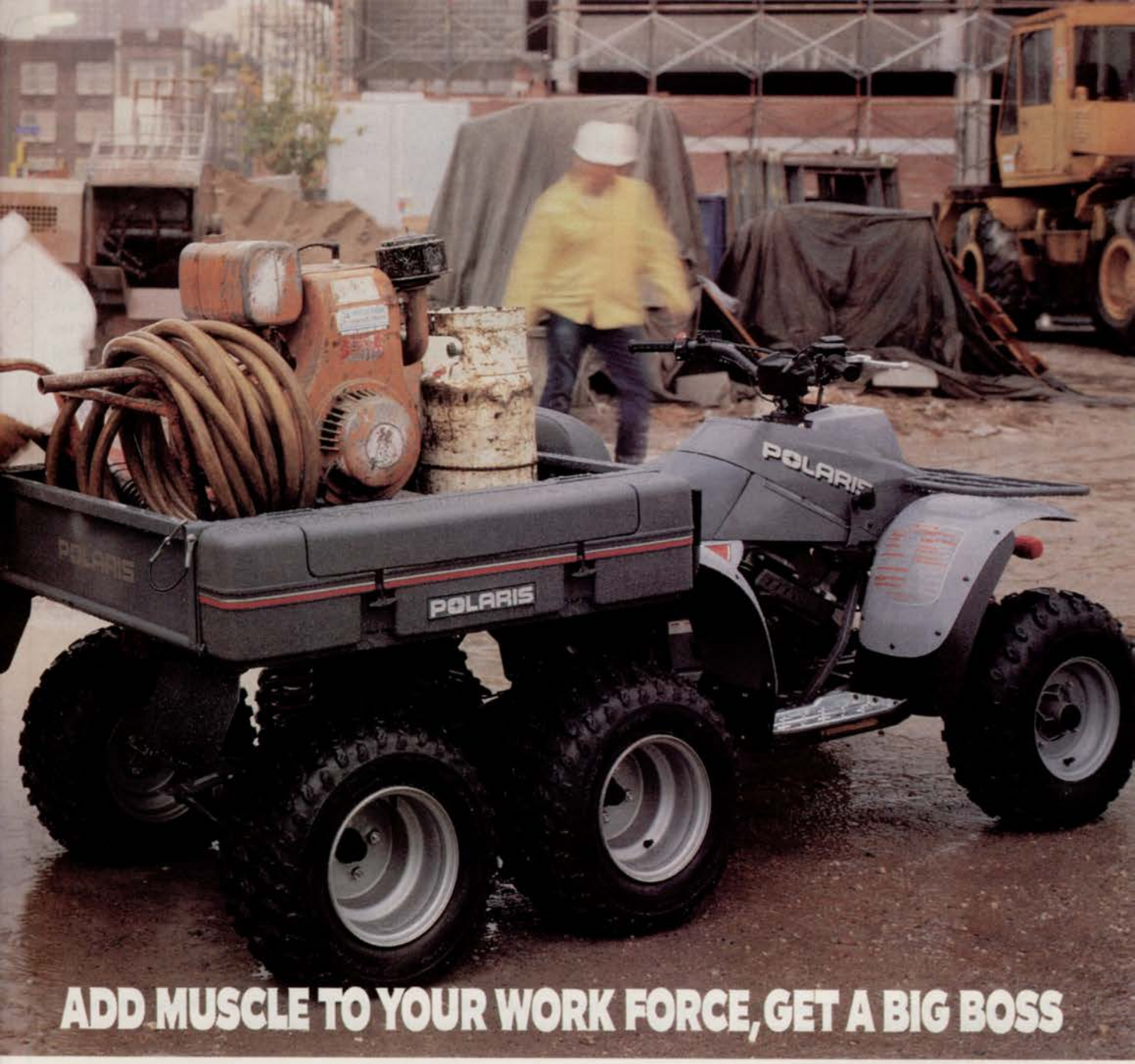
Often, such mishaps are preceded by telltale signs like engine sluggishness, hard starts, high fuel consumption, spark-plug "fouling" or smoky running. But damage is now done and you are compelled to decide: should the engine be rebuilt or replaced?

Either choice has advantages, but both assuredly entail unplanned expenses.

Confusing, too, is whether or when to rebuild or replace an engine that still runs reasonably well, but simply doesn't bore strongly; a noticable "tiredness" which affects work output.

Consider sage advice from Kohler Engine Co.'s service and technical publications manager Paul Scholten: the rebuild-or-replace decision centers around variables which can and should be combined to arrive at the best answer. The sticker price for a replacement engine need not be the only or foremost factor.

"You've got to look at the whole situation," says Scholten. Labor costs for



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The term "labor-saving device" might have been coined to apply to the Polaris Big Boss. It's your worker of choice when human hands, arms and backs aren't quite enough, but a pickup or dump truck is too much. And it's a terrific recreational vehicle as well, able to haul an entire campsite in a single trip, or supply a remote hunting cabin with food and equipment for a week. For farms, construction sites, back yards, or the back woods, a Big Boss gives you the extra strength you need to do what needs to be done.

MADE IN THE USA

Warning: ATV's can be hazardous to operate. For your safety: Never carry passengers, avoid excessive speeds, and be particularly careful on difficult terrain. Polaris ATV's may not be ridden by people under 18 years of age. Polaris recommends that all ATV riders take a training course. For safety and training information, see your dealer or call Polaris at 1(800)328-9975. (In MN, 1(800)247-6670).

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Circle No. 117 on Reader Inquiry Card

Paul Scholten: "Look at the whole situation."

Bob Molinatti: "Eliminate downtime."

Norman Beck: "Consider depreciation."

rebuilding or replacing should be taken in context with factors such as overall equipment condition and expected duration of downtime. Other external factors might even include customer or club member attitudes toward delays and possibility of modest repairs to "get through" the season until permanent repairs or replacement can be made.

Bob Molinatti, owner of Small Engine Repair in Colchester, Vt., offers a general rule of thumb when advising his clients.

"If we can rebuild an engine for 50 to 60 percent of the cost of a new one, we've done the guy a favor," says Molinatti. The second part of his equation: 80 to 100 percent of the engine's original performance should be revitalized after a rebuild.

That formula, also dependent on factors such as equipment depreciation and condition, seems correct to Norman Beck, executive director of the National Equipment Servicing Dealers Association, an industry group headquartered in Peoria, Ariz.

Beck says to weigh and balance your options carefully, if you have the luxury of time.

"It just makes good business management sense to not only consider the cost of repairs or replacement, but also the depreciation of the equipment itself." Beck adds that the decision for smaller operations may be a simple one: a new light-use mower can be purchased for as little as $150, easily beating rebuilding or replacement costs in many cases. With bigger operations, though, rebuilding or replacing engines on good, serviceable equipment takes on a different dimension.

From a labor point of view, it is often easier and less expensive to install a whole new engine. Still, many engines can be saved within an hour's time and with inexpensive parts, Beck adds.

This autumn, Molinatti did a bulk mailing to convey a simple message: schedule rebuilds with him in the winter months, when his workload is smaller and engines and equipment can receive non-emergency attention.

Winter is also the time Molinatti can take rebuild jobs on a scheduled basis; a time convenient for him and clients.

"The biggest thing people don't consider is to schedule work for us by appointment during the winter months," says Molinatti. He can usually offer a modest price break in the off-season from the normal $30 hourly labor rate.

Perhaps the biggest cost consideration does not show up on any parts and labor invoice: downtime.

Consider other costs incurred in an emergency situation, Molinatti and others suggest, and see how quickly expenses compound: lost man-hours in transporting to and from his shop, the price of gas for such trips, makeup time for work uncompleted during downtime, and wages being paid while little or no landscape work is being accomplished.

"We try to eliminate downtime and emergency repairs," says Molinatti.

He says costs vary, too, by model and manufacturer as more companies enter the small engine market. Example: installing a new set of rings varies in price from $300 to $500.

The smallest of the small engines, however—such as string trimmers and backpack blowers—rarely, if ever, live a second life.

"We log in all our equipment repairs," explains Peter Levinsky, of Levinsky Landscaping, Colchester, Vt. "I can pull a sheet out and tell you how many times a weed whacker has been down. And if it gets to the point where it looks like it's going to be a problem, open the dumpster, here it comes."

Buying brand new equipment has several advantages.

"I've got a happier employee with a new piece of machinery," says Levinsky. "I may be keeping a closer eye on it because it's new, but he knows it's brand new and better take care of it.

"And it seems like I might get more

Scheduling diagnostic checks

■ Diagnostic tests on small engines will give you a better understanding of exactly how well or poorly a unit is performing and where some difficulties present and future may lie.

Kohler Engines Co. publishes guides for engine rebuilding and repowering. Troubleshooting techniques include inspection for excessive sludge, cylinder wall scoring, piston damage and oil leaks.

Ball and sleeve bearing workings, proper lubrication (including proper levels and viscosity) and condition of the engine's valves are also keys to smooth operation. All can be checked for flaws during overhauling, which can be performed in-house with some advance knowledge and proper measuring tools. Technical information—such as bolt torquing levels, tightening sequences and other precise measurements—are usually available from the manufacturer or dealer/distributor.

Inspections and overhauls also include examining timing, fuel pump and carburetor operations; look-sees that can contribute to improved engine efficiency and power. A faulty fuel pump, generally, should be replaced with a new one.

Carburetor problems can stem from improper setting or, more frequently, varnish and gum buildup. Cleaning solvents can restore carburetor performance when used properly. Carburetor reconditioning kids are readily available from Kohler, Briggs & Stratton, Onan and most major small engine manufacturers. They include the most common items such as gaskets, which need replacement because of routine wear and tear.

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bang for my buck by doing it that way rather than getting it repaired at $40 an hour."

Scholten says there is no substitute for scheduled upkeep on smaller motors and gives generally passing grades to equipment owners in the workaday world. "The real professional recognizes the value of a good maintenance program," he says.

Likewise, Molinatti gives passing marks to those maintaining smaller engines: "They do moderately well (but) maintenance never seems to be stressed." He also notes that in one sense, smaller engines require more critical and timely maintenance than larger motors.

Consider, Molinatti asks, what is demanded of a typical commercial walk-behind: constant, daily use (four to five hours at 3600 rpm) under strenuous conditions. This makes routine maintenance mandatory and rebuilding or replacing perhaps inevitable.

Or consider the title of a monograph Scholten once authored: "Small Engines Can Last Forever—Almost."

—Jack Simonds

Save in spring: compost now

Now is the time for all good landscape managers to come to the aid of their country. Composting is a start.

■ October is the perfect month to gather leaves and other landscape debris for starting compost piles and wind-rows.

Yard waste composting is a practical idea for lawn care operators, landscapers and golf course superintendents. But the undertaking should be approached with planning both on paper and on site, according to an Ohio expert.

What can composting do?

1) It eases the strain on overburdened landfills while creating organic materials which can be used on the job.

2) It favorably affects the pocketbook by lowering tipping (disposal) fees and streamlining disposal methods.

3) It delivers rich, valuable humus in one to two years.

Rick Thomas, an Akron, Ohio, LCO who also works with the area's cooperative extension service, offers several suggestions toward setting up compost windrows this month. Keep in mind composting's basic formula: equal parts of organic material, air and moisture.

Thomas recommends:

• Mixing grass trimmings with other materials. A 30 percent grass to 70 percent other "bulking" items mix is ideal. Leaves, shredded prunings and other organic matter best combine with grass for healthy aerobic (air-based) decomposition.

Grass trimmings do not decompose well alone; the plant is 80 to 85 percent water. Grass mats onto itself and when slow anaerobic (little or no air) decomposition occurs, a putrid smell results. A tip: create a stockpile of bulk materials to mix with grass trimmings when needed.

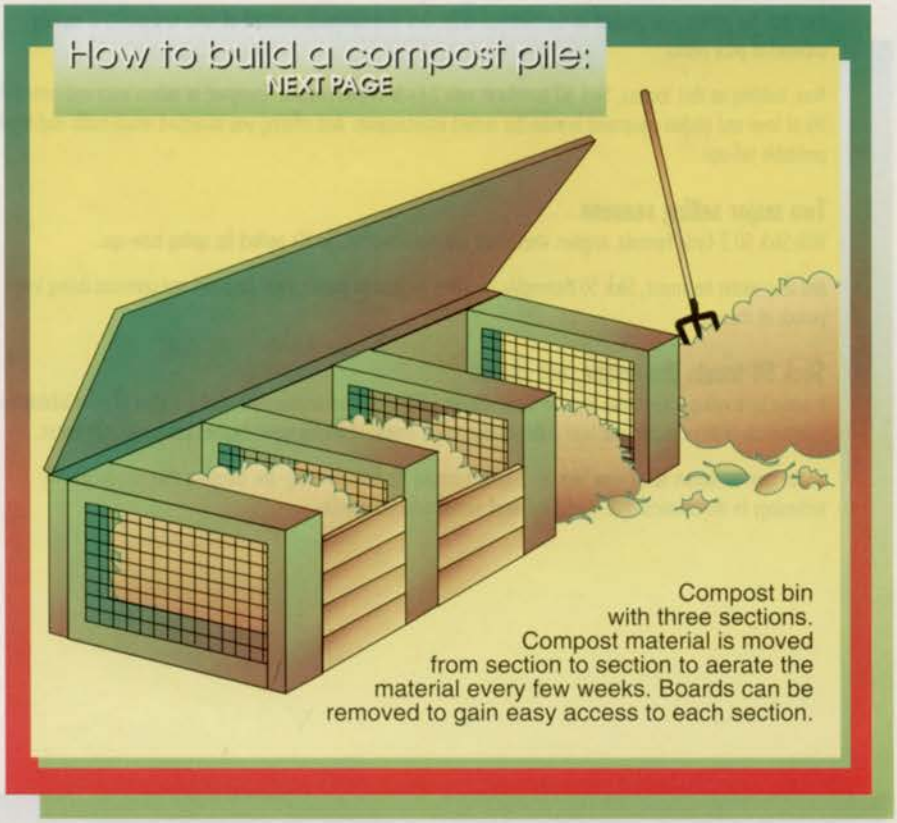
• Checking with local and state environmental authorities beforehand for composting setup rules. Ohio, for instance, has one set of prescribed regulations for commercial yard waste composting sites up to three acres and another for larger tracts. Controls are designed to prevent leaching into the water table and nearby water supplies. Some licensing may be needed in advance.

• Wind-rowing materials in long rows rather than composting in piles. Thomas says when piles exceed six feet, the weight of the materials tends to fall onto itself, depriving the core of needed air for proper decomposition.

A "manageable size," in his view, is a wind-rowed line no taller than six feet or wider than 14 feet. Thomas notes some operators may find it worth investing in compost-turning tractor attachment systems; although the expense is not necessary. Also possible is pooling with other landscapers to share both expenses (such as shredding) and end product.

• Considering switching to grass mulching at all times; a "don't-bag-it" philosophy which is being stressed in areas where he meets local governments. Thomas admits customers don't always understand or like mulching, but the idea can be put across if it is patiently explained.

—Jack Simonds



Compost bin with three sections. Compost material is moved from section to section to aerate the material every few weeks. Boards can be removed to gain easy access to each section.

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Building a compost pile

■ According to the Ohio Cooperative Extension Service, here is a good formula for building a compost pile. A properly made pile will reach temperatures of 140 degrees in four to five days. At this time, you'll notice the pile "settling," a good sign that it is working.

1st layer: 3 to 4 inches of chopped brush or other coarse material on top of the soil surface allows air circulation around the base of the pile.

2nd layer: 6 to 8 inches of mixed scraps, leaves, grass clippings, sawdust, etc. Materials should be "sponge damp."

3rd layer: 1 inch of soil serves as an inoculant by adding micro-organisms to the pile.

4th layer: (optional): 2 to 3 inches of manure provides the nitrogen needed by micro-organisms. Sprinkle lime, wood ash and/or rock phosphate over the layer of manure to reduce the pile's acidity. Add water if the manure is dry.

5th layer: repeat steps 1-4 until the pile is almost the recommended height, then top off with 4 to 6 inches of straw and scoop out a "basin" at the top to catch rainwater.

Planning your business around Mother Nature

■ Not even Mother Nature can slow down a good landscape company like Acres Enterprises in Wauconda, Ill.

"The secret is to start early and keep as organized as possible," says Pat McEntee, vice president of sales. "We'll sit down in June or July when it's 85 degrees outside and actually start talking about our snow-plowing business."

And when spring breaks, "we're poised and ready to go out the door," says McEntee. "Planning for spring is done at least by the prior September."

Certainly, by New Year's Day upper management knows how many foremen they'll need, what kinds of equipment will be purchased, and deadlines for various contracts.

Who's involved with the planning process? All seven managers: owner Jim Schwantz, McEntee, operations vice president Jerry McMaster, accountant Rob Reblin, landscape maintenance supervisor Dave Lett, garage manager Bob Nedli and office manager Candice Simeon.

Some landscapers would say Acres is top-heavy in management, but it's paid off. Since the company's 1983 inception, it's grown into a $4.2 million business.

Some of the innovative ideas Schwantz and his staff implement:

• A computer hook-up with a national weather service that helps minimize the effect Mother Nature has on business. With some accounts 1-1/4 driving hours away, crews can be more efficiently diverted to dry areas. "When the call comes in from the field," notes McMaster, "sometimes we can tell them to sit tight and the storm will blow over." Adds Schwantz: "And it's an awesome tool for knowing when, where and how much it's going to snow."

• A minimum of three parties or picnics per year are scheduled: two for workers and their spouses, and one more that includes children. In eight years, no staffers have been divorced. "We try to keep our families happy, and in the spring that's a challenge," McEntee notes.

• Business cards for all foremen. Besides lending an air of professionalism to the company, the cards give the foremen a sense of pride, knowing they are depended upon to help keep customers happy.

• The annual budget includes what is called a "Caring Fund," out of which comes compensation for any equipment lost, stolen or broken during the year ($18,000 budgeted for 1991). When the fiscal year ends, anything left in the fund is divided among the employees as a bonus; in the past, between $80 and $600 per employee.

"We've got a good handle on things," says Schwantz. "We're not so much a seat-of-the-pants company like a lot of others. All of us as a team have always known where we were going. We manage well; it's gotten us where we are and will keep us there."

—Jerry Roche

Members of the Acres team: (standing, left to right) Candice Simeon, Jim Schwantz, Rob Reblin, Dave Lett, Pat McEntee; (kneeling) Bob Nedli, George Kaiser, Jerry McMaster.

HOW MUCH PLANNING?

The amount of lead time Acres Enterprises of Wauconda, Ill. uses for annual planning purposes:

Job	Lead Time
Capital improvements	18 months
Selling strategy	8-12 months
Budgeting	9 months
Supply purchases	5 months
Seasonal decision-making	4 months

Source: Acres Ent.

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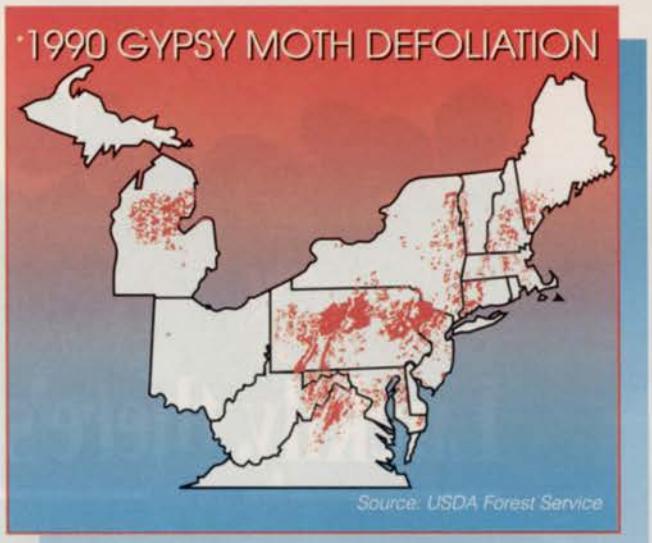
Circle No. 103 on Reader Inquiry Card

Healthy trees limit damage by gypsy moth



As these pesky varmints move across the country, steps to limiting damage are becoming more intensive.

■ An overall tree health program that includes pruning, species selection, fertilization and watering can help overcome the damaging defoliation dished out by the ever-expanding gypsy moth migration.

Last year, 7.3 million acres of trees suffered moderate to heavy defoliation because of the *Lymantria dispar* Linnaeus moth.

Besides large infestations in the Northeast (see map), the moth has also hit California, Utah, Washington, Oregon and other states, according to Dr. Jerry Hertel of the U.S. Forest Service.

A landscape manager can avoid potential problems on a property with diversified planting that includes species which the moths generally avoid.

If trees under your care are indeed hit by this pest, an aggressive program of good general tree health can help recovery efforts, says Hertel.

"One of the misconceptions is that the gypsy moth kills everything it touches," Hertel points out. "Secondary organisms actually do the killing." Armillaria fungus can attack roots, and the two-lined chestnut borer can make mincemeat out of the trunk and branches of a moth-infected tree.

"If the tree is healthy, it will maybe survive two to three years of defoliation," Hertel observes. "If the tree's sick, maybe one year of defoliation will kill it."

Here are some tips to keep the tree healthy and moth-free:

- Avoid compacting the ground or changing the surrounding grade level.
- Try not to subject the tree to lawn mower wounds.
- Make sure the tree has enough fertilizer and water.
- Remove moth shelters, such as bark flaps, dead trees and branches, boxes, cans and old tires.

Pheromone traps can be used to detect the pest's presence, though they will not drive them away, Hertel emphasizes. "(The traps) would clue you to look for the egg masses. Just because you have male moths doesn't mean you'll find the egg masses in an area."

Simple scraping will not kill an egg mass. Eggs, larvae and pupae can be destroyed with soapy water or a kerosene dip.

Skirt traps can be used to detect and trap larvae. They are made by tying an 18- to 24-inch wide piece of burlap around a tree with a string, and then draping it downward like a skirt. The caterpillars will hide there during the day, and you can then count and remove them.

Or, use barrier bands consisting of double-sided sticky materials such as Tanglefoot, petroleum jelly or grease to prevent larvae from crawling up the trunk. These materials should be applied on duct tape or tar paper to avoid contact with the bark. (Petroleum-based products can cause swelling and cankering on thin-barked trees.)

PESTICIDES FOR GYPSY MOTH CONTROL

Active ingredient	Representative trade names	Remarks
Bacillus thuringiensis	Dipel Thuricide	Registered for aerial and ground application. Available under a variety of trade names. Toxic to other moth and butterfly larvae. Can be used safely near water.
acephate	Orthene	Registered for aerial and ground application. Available under a variety of trade names. Toxic to bees and some gypsy moth parasites. Commonly used from the ground to treat individual trees.
carbaryl	Sevin	Registered for aerial and ground application. Available under a variety of trade names. Toxic to bees and gypsy moth parasites. At one time, the most widely used chemical in gypsy moth control programs.
diflubenzuron	Dimilin	A restricted-use pesticide that can be applied only by certified applicators.

Source: U.S. Forest Service

LANDSCAPE ORNAMENTALS
REACTION TO GYPSY MOTH INFESTATION

More preferred
alder
apple
aspen
basswood
river birch
boxelder
hawthorn
larch
mountain ash
oak
sweetgum
willow

Less preferred
arborvitae
ash
catalpa
E. red cedar
fir
grape
holly
honeylocust
horsechestnut
black locust
mulberry
spruce
sycamore
tuliptree

Intermediate
A. hornbeam
A. beech
black gum
buckeye
sweet birch
cherry
chestnut
cottonwood
cucumbertree
dogwood
elm
E. hophombeam
hickory
magnolia
maple
persimmon
pine
redbud
sassafrass
serviceberry
sourwood
walnut

Source: Ohio State University

Gypsy moth skirt trap (left) and milk carton trap will help monitor gypsy moth presence.

Natural enemies of the gypsy moth are parasitic and predatory insects such as wasps, flies, ground beetles and ants. Some spiders and certain birds such as chickadees, bluejays, nuthatches, towhees and robins will eat the moths, as will about 15 species of mammals like white-footed mice, shrews, chipmunks, squirrels and raccoons.

Some pesticides commonly used to control gypsy moths are *Bacillus thuringiensis*, acephate, carbaryl and diflubenzuron. Before using these products, however, check with your county extension agent, state entomologist, state forester or the U.S. Forest Service, Hertel advises.

—Jim Guyette

Positioning with customer service

by Rudd McGary, Ph.D.

■ Al Ries and Jack Trout were the people most responsible for using the concept of "positioning" in their book, "Positioning: The Battle for Your Mind."

The word means to take a place in the consumer's mind by differentiating your company from the rest.

Some examples of famous positions are "The Pepsi Generation" and "At Ford, Quality is Job One."

In the green industry, we must work just as hard to differentiate as do the large national corporations. We must first work to find ways to explain how we are different, and then be able to deliver what we have promised.

Some of the most popular positions in the green industry:

- The technically competent company: "We know how to make your grass grow" or "We have a licensed agronomist (or horticulturist or arborist) on staff."
- Low price: "No one does this for less," or "We'll meet or match any price you get."
- Local ownership: "We are your neighborhood store for green grass" or "Locally owned and operated."

What is 'positioning' and how do you use it to get more customers?

I would not recommend low price positioning; it tends to cut into profits and it's very hard to get rid of. But in some cases, local position works, most often in smaller towns and cities.

There is, however, one position that is a recurrent desire of consumers: customer service. The use of this as a position makes sense—but it isn't simply putting this on your trucks and going out to make your millions.

Certain common factors that consumers say they want that stress customer service:

1) Politeness—Both in person and on the phone, the customer wants to be treated like a human being. If your people who interact with the public are rude to them, you won't have a company very long. Almost no company has ever been accused of treating its customers too politely.

2) Problem resolution—If a customer has a problem and can get it resolved quickly, he or she will perceive the company as one which gives good customer service. This takes:

—a staff that can handle unhappy customers on the phone;

—people who are technically capable of responding to problems;

—people who can explain what the problem was to the consumer and what is being done about it; and

—follow-up to make sure the customer is satisfied.

3) Professionalism—Not only in technical matters, but also in the ways you administer the account: how your bills go out, how you collect, how you problem-solve, how you treat customers and how you look (from uniforms to stationery).

You might want to consider using another position in conjunction with customer service. The key is to understand the customer's needs and make sure your organization works on customer service every day.

Do that, and include it in your positioning, and you should prosper.

—The author is senior consultant for Strategic Consulting Group of Worthington, Ohio.

TECH CENTER

Endophytes: insurance against insects

Though insect-resistant endophytes are not confined to perennial ryegrass cultivars any more, none have been found in bluegrass—yet.

by Richard Hurley, Ph.D.

■ Genetically-improved turfgrasses containing endophytes help us as landscape managers to enhance the environment, reduce maintenance costs, and conserve and improve soil and water resources.

Here are some advantages to turfgrass containing endophytes:

1) Frequent, dramatic enhanced resistance to many insect pests that feed on plant leaves.

2) Improvements in stress tolerance.

3) Superior performance of some turfgrasses during moisture deficits.

During 1990, an estimated 13 million pounds of elite, endophyte-containing perennial ryegrass seed was used throughout the world.

Efforts are being made to find or develop and use desirable endophytes in Kentucky bluegrass, strong creeping red fescue, blue fescue and various bentgrasses.

The discovery of a relationship between an endophytic fungus, *Acremonium lolii*, and resistance to the Argentine stem weevil has led to perennial ryegrass, tall fescue, chewings fescue and hard fescue with endophyte-enhanced insect resistance and improved stress tolerance.

No researchers have reported any adverse effects of endophytes on turf performance.

Endophytes might be considered similar to insurance: of little value when conditions are favorable, but of substantial value when turf is under certain biological or environmental stresses.

Endophytes enhance resistance to many insects, including sod webworms, billbugs and chinch bugs. Modest, but often meaningful, white grub resistance is being studied in Kentucky and Rhode

Table 1

ENDOPHYTE LEVELS FOR PERENNIAL RYEGRASS

Variety	% ENDOPHYTE CONTENT IN SEED* Hi	Mod. Hi	Mod. Lo	Lo
Yorktown III	97			
Palmer II	97			
Gen-90	97			
Express	97			
Advent	97			
Seville	96			
Dandy	96			
Duet	93			
Manhattan II	93			
Prelude II	93			
Repell II	92			
Assure	92			
Pleasure	92			
Target	92			
Riviera	91			
Gettysburg	91			
Pennant	91			
Legacy	90			
4 Del. Dwarf	90			
Pinnacle	90			
Repell	89			
SR 4200	89			
Commander	88			
Regal	86			
Saturn	85			
Competitor		71		
Accolade		70		
Equal		68		
Calypso		66		
Citation II			59	
Stallion			58	
Caliente			54	
Premier			50	
Entrar			47	
Prestige			43	
Derby Supreme			38	
Lindsay			37	
Charger			34	
Envy			30	
Rodeo II			27	
Essence				20
Fiesta II				15
Cowboy II				12
Danilo				6
Ovation				5
Loretta				4
Allegro				1
Gator				1
Danaro				1
Pennfine				1

(Zero endophyte in other varieties)

** NOTE: This data from Rutgers University was obtained from seed lots submitted to the National Turfgrass Evaluation Program. Seed lots may contain lower percentages of seeds with viable endophytes because of loss of viability during seed storage.*

Source: Dr. Hurley

INSIDE

Chlorine damage to landscape plants, page 28

Treat now for pythium rots page 30

Herbicide injuries to ornamentals, page 31

Island. In addition, reduced numbers of spiral nematodes and stubby root nematodes were found on tall fescue containing an endophyte.

David Huff of Rutgers University is studying the mechanism, genetic or endophytic, of resistance to dollar spot observed in a strong creeping red fescue plant. But with this possible exception, we are not aware of convincing examples of successful disease suppression by endophytes under field conditions.

Acremonium endophytes can produce superior performance of some turfgrass genotypes. Instances of better summer survival, enhanced fall recovery and reduced weed invasion were observed in high-endophyte perennial ryegrass, tall fescue, hard fescue and chewings fescue.

We have observed larger, more competitive tall fescue plants infected by an Acremonium endophyte.

Perennial ryegrass—Dramatic progress has occurred in genetically improving perennial ryegrass for turf. Useful endophytes are being incorporated into many new perennial ryegrass cultivars. An estimated 13 million pounds of turf-type perennial ryegrass seed containing a high percentage of endophyte were harvested in 1990.

Turfgrass managers desiring the benefits of endophyte-enhanced performance must carefully select this seed. Endophyte viability declines during seed storage, especially under hot, humid conditions. Seed harvested in June or July should maintain a high level of viable endophyte if harvested properly, stored under cool, dry conditions and used before or during the following spring.

Tall fescue—Most, but not all, seed lots and plantings of Kentucky 31 tall fescue have a high percentage of seed or plants infected with an endophyte.

Beginning with the release of Rebel tall fescue in 1980, there has been continued, dramatic genetic improvements in tall fescue for turf use. However, only a few of the newer cultivars have high percentages of plants containing endophytes.

The limited use of endophytes in turf-type tall fescues is due to:

1) the potential misuse of cultivars for pastures, where they have deleterious effects on livestock;

2) concerns about grazing seed fields and use of forage produced as a by-product in seed production; and

3) lack of identification of the most desirable endophytes for use in best enhancing turf performance.

Fine fescue—Recent research indicates that endophyte infection in hard and chewings fescue is associated with resistance to chinch bugs. Further studies with three species of aphids and fall armyworms have confirmed this association with insect resistance.

Resistance levels in endophyte-enhanced fine fescues are dramatic. Endophyte infection in strong creeping red fescue, hard fescue, chewings fescue and blue fescue are associated with significant difference in insect survival and preference. No greenbugs survive after 72 hours on endophyte-enhanced hard, blue and chewings fescues. No fall armyworms survive to pupation when feeding on hard and chewings fescue that contain endophytes.

Table 2

ENDOPHYTE LEVELS FOR FINE FESCUE

Variety	% ENDOPHYTE CONTENT IN SEED* Hi	Mod. Hi	Mod. Lo	Lo
Jamestown II	100			
Reliant	100			
Warwick	96			
Southport	94			
SR 5000	92			
SR 3000		64		
Rainbow		63		
Valda		47		
Bridgeport		26		

(Zero endophyte in other varieties)

Table 3

ENDOPHYTE LEVELS FOR TALL FESCUE

Variety	% ENDOPHYTE CONTENT IN SEED* Hi	Mod. Hi	Mod. Lo	Lo
Titan	98			
Shenandoah	86			
Mesa		70		
Tribute		58		
Aguara		50		
Arid			48	
Normark 99			42	
Rebel Jr.			37	
Trident				28
Rebel II				28
Winchester				24
Taurus				18
Apache				18
Finelawn I				16
Sundance				14
Thoroughbred				14
Murietta				14
Bonanza				12
Chieftain				6
Hubbard 87				4
Finelawn 5GL				2

(Zero endophyte in other varieties)

** NOTE: This data from Rutgers University was obtained from seed lots submitted to the National Turfgrass Evaluation Program. Seed lots may contain lower percentages of seeds with viable endophytes because of loss of viability during seed storage.*

Source: Dr. Hurley

Bentgrass—Bentgrass plants collected from old turfs of the Mid-Atlantic region of the U.S. appear to be relatively free from endophytes, based on recent work at Rutgers University. No evidence of endophytes was found in more than 500 bentgrass samples examined.

It is likely that endophyte-containing bentgrasses would be more abundant in Europe, where bentgrass strains originated. Endophyte viability can be lost rather quickly in seed, especially when stored under warm, humid conditions. Therefore, many introduced seed lots would be expected to lose endophyte viability prior to planting.

Kentucky bluegrass—At Rutgers University, we have examined more than 800 plants of Kentucky bluegrass collected primarily from old turfs of the eastern U.S. without finding an endophyte.

We are unaware of a successful inoculation of an Acremonium endophyte from other grass genera into Kentucky bluegrass. We are currently attempting to transfer an endophyte (*A. typhinum*) from big bluegrass (*P. ampla Merr.*) into Kentucky bluegrass by hybridization and inoculation.

Other grasses—Endophytes have been discovered in many other grasses

used for turf and soil protection. We examined more than 800 herbarium specimens in 93 grass genera: Agrostis, Bromus, Cinna, Elymus, Festuca, Lolium, Melica, Poa, Sitanion and Stripa. Many of these endophyte-containing species were native to the U.S., but much work is needed on the role of endophytes in these and many other grasses.

This article was developed by editing the following papers: "Importance of Acremonium Endophytes in Turfgrass Breeding and Management" by C.R. Funk and J.P. Breen of Rutgers University and R.H. White of Texas A&M University; "Endophyte Content of Cultivars and Selections in the 1990 National Perennial Ryegrass Test" by Suichang Sun, Nancy Januszka, Kelly Hollowood, Maribeth Wheeler, Carolyn Garvey and Jennifer M. Johnson-Cicalese, senior lab technician and lab assistant at Rutgers University and lab assistants and research associate at the University of Rhode Island.

TALL FESCUE SEED CONTAINING VIABLE ENDOPHYTE AS RELATED TO STORAGE ENVIRONMENT AND DURATION OF STORAGE

STORAGE ENVIRONMENT	TEMP. F°	MONTHS IN STORAGE 3	7	11	15	19	27
FREEZER	-4	100	100	100	100	90	90
REFRIGERATOR	43	100	90	85	90	95	90
SEED STORAGE RM.	50	90	100	80	75	45	25
ROOM TEMP.	70	95	55	0	0	0	0
SEED WAREHOUSE	70-95	95	60	0	0	0	0

M.C. JOHNSON 1984

—The author is director of research at Lofts Seed Inc. and an adjunct professor at Rutgers University.

Monitoring chlorine damage to plants

Even small emissions of chlorides can cause severe damage to plants near the leak, as observed in New York and Nevada.

by Dr. Robert Ll. Morris and Karen Lawson-Dyka, University of Nevada

■ Landscape managers should pay particular attention to any plant damage that may be caused by chlorine gas or hydrogen chloride. Such problems have been associated with the gases escaping from industrial sources during the manufacturing process or from accidental leaks.

(Chlorine and hydrogen chloride are used to produce pesticides and synthetic materials such as plastics and disinfectants. Emissions of chlorine have occurred around potash works, from pickling baths of hot-dip galvanizing plants, and in the combustion of PVC-containing wastes. Accidental emissions have occurred near swimming pools, sanitation plants and factories.)

Twice in Yonkers, N.Y., emissions have damaged 30 species of plants, including tree-of-heaven, apple, cherry, maple, basswood, dogwood, elm, ash, sweetgum, hemlock, oak and white pine. A more recent accident occurred in southern Nevada (see related story).

Chlorides have a herbicide-like effect on plants. Even small emissions can cause severe damage to plants near the leak. Plant damage is generally measured at about 4-1/2 feet above the ground, or at the upper limit of vegetation.

Table 1

TYPES OF DAMAGE FROM CHLORINE

Broadleaf plants

leaf and flower drop
bronzing
chlorosis
marginal and interveinal necrosis
mottling and chlorotic flecking
bleached tissue
orange-brown necrosis
dieback
stem and leaf wilting
blazing on leaf underside (not noted in Nevada, but reported in literature)

Conifers

needle tip burn
candle distortion (not in literature, but found in multiple Nevada locations)
reddish-brown necrosis
dieback

Grasses (and other monocots)

leaf tip burn
marginal leaf burn
chlorosis
twisted blades (not in literature, but found in multiple Nevada locations)

Source: The authors

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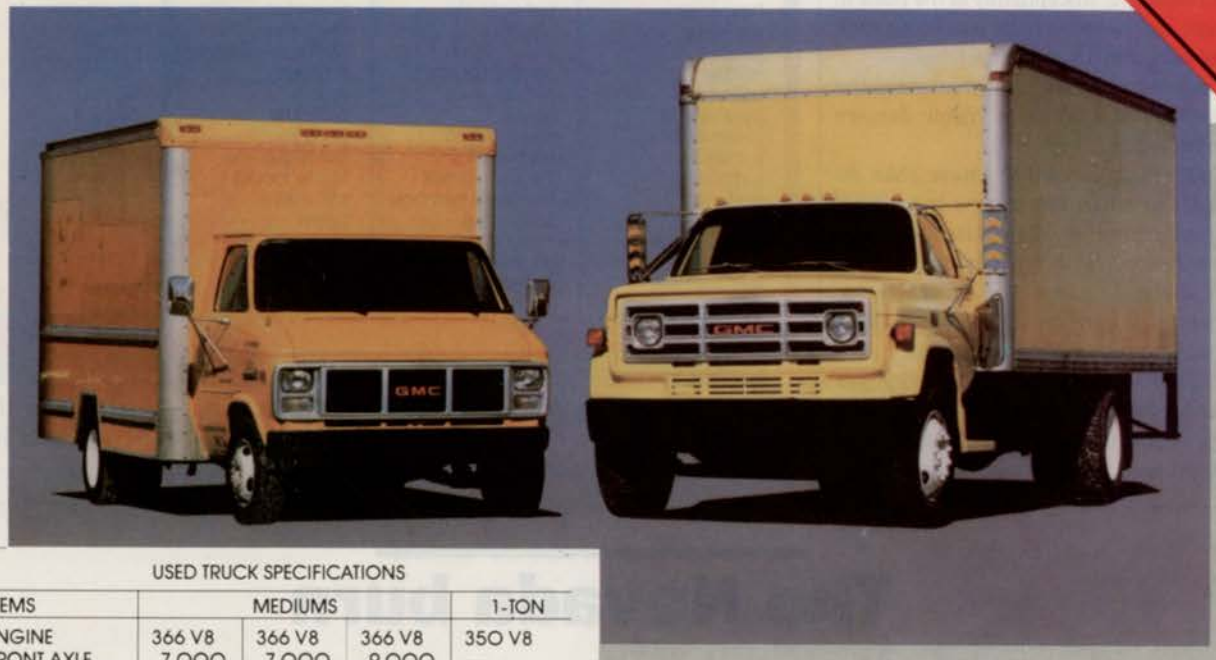

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REAR AXLE	17,000	17,000	18,500	7,500
TRANSMISSION	5-SPEED	5-SPEED	5-SPEED	AUTOMATIC
BODY	18' FRP	22' FRP	24' FRP	14' FRP
STEERING	POWER	POWER	POWER	POWER
FUEL TANK	50 GAL.	50 GAL.	50 GAL.	33 GAL.
DOORS	ROLL-UP	ROLL-UP	ROLL-UP	ROLL-UP
TIRES	10-22.5	10-22.5	11R-22.5	8.75 R16-5
WHEELS	DISC	DISC	DISC	DISC

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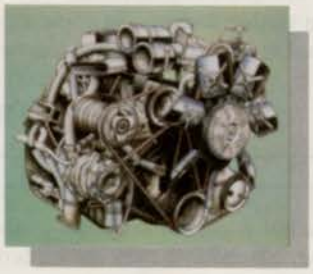

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Plant damage can be divided into four non-lethal categories:

(1) rapid leaf drop; **(2)** tissue chlorosis or discoloration; **(3)** tissue distortion and tip burn; and **(4)** marginal and interveinal necrosis.

The degree of plant damage depends on the amount of chlorine in the air, its duration of exposure, susceptibility of the plant to damage, and environmental conditions such as moisture content and temperature.

Lower concentrations of chlorine in the atmosphere will do more visible damage when humidity is high.

Under high humidity (more than 80 percent) or when fog or dew is present, chlorine combines with water vapor to form a hydrochloric acid aerosol mist on plant surfaces. Under these conditions, droplets may form on leaf surfaces, causing necrotic spots or burns to form.

Under low humidity, the chlorine gas forms an anhydrous hydrogen chloride which may cause less visual damage but has been speculated to cause more severe damage because of the dehydrating action on exposed tissue.

Acute damage happens so rapidly that chlorine is not assimilated by the plant and cannot be detected easily in tissue samples.

Table 2

SEVERITY OF DAMAGE TO PLANTS IN SOUTHERN NEVADA

NONE	SLIGHT	MODERATE	SEVERE
asparagus fern	Algerian ivy	agave dianthus	apricot
barrel cactus	ash	heavenly bamboo	bird of paradise
cholla cactus	canna	honeysuckle	chinaberry
dusty miller	bush morn. glory	stone pine	Chinese/Sib. elm
euonymus	English ivy	Jap. black pine	lilac
hesperaloe	fortnight lily	lavender	marigolds
ice plant	photinia	magnolia	nectarine
juniper	iris	Mexican primrose	olive
myrtle	pampasgrass	mulberry	peach
palms	pittosporum	mums	plum
pyracantha	salvia	oleander	poplars
rosemary	snapdragon	pansy	rose
santolina	verbena	pomegranate	
turfgrasses	Italian cypress	Idaho locust	
wisteria	heavenly bamboo	silk tree	
yucca	arborvitae	privet	
Texas ranger	almond		
athel	chrysanthemum		
star jasmine	Indian hawthorn		

Source: The authors

The Nevada burn

■ Early in the morning of May 6, 1991, a large blue-green cloud was released from a broken two-inch line that led to a 150-ton storage tank of liquid chlorine. An industrial plant in southern Nevada accidentally released 60 tons of chlorine that rapidly vaporized and caused the evacuation of 10,000 residents in a 20-square mile area. Nine people were hospitalized. In the affected area, landscape plants bathed in an unknown concentration of chlorine gas for several hours.

A team of commercial horticulture volunteers surveyed landscape plant damage in a neighborhood within 1/2 mile of the chlorine leak one week after the accident. Recorded plant damage is shown in Table 1. Table 2 lists the plants that were found to have probable chlorine emission damage.

Within 24 hours after emission, partial to total leaf drop occurred on elm, cottonwood, chinaberry, all stone fruits, some pome fruits, rose, olive, mulberry, pomegranate, Texas privet and Indian hawthorne.

Flowers were not affected and were more tolerant of exposure to chlorine with one exception: leaf and flower drop on Indian hawthorne. Chlorosis and necrosis occurred three to five days after emission. New growth began to cover damaged tissue, and refoliation occurrred in seven to 10 days.

All pines suffered some sort of damage, ranging from twisting and dieback of new growth (candles) to needle tip burn and needle drop.

Turfgrasses (tall fescue, bluegrass and bermuda) all tolerated the exposure with no visible damage. In some cases, chlorine damage was difficult to separate from previous winter damage.

—Dr. Morris, Ms. Lawson-Dyka

Treat now for pythium rots

This is the time of year to make sure pythium rots don't take away valuable turf areas.

■ Although this disease is most frequently associated with established bentgrass/annual bluegrass putting greens, it can also be a serious problem on highly managed home lawns and newly-seeded areas. It is particularly severe on ryegrasses, bentgrasses and bluegrasses.

To minimize turfgrass losses from pythium root rot (PRR), Dr.Eric Nelson of Cornell University says, manage to reduce plant stress or eliminate prolonged wet periods.

Early symptoms of PRR may be visible in the early spring immediately after snow melts, but are most common in the late spring. Symptoms may be evident any time during the growing season, and may continue into late autumn.

Symptoms:

- small diffuse yellow or reddish brown patches about two to three inches in diameter, often resembling early stages of pink snow mold;
- plants slow to come out of winter dormancy;
- less vigorous growth;

• during summer, small tan to brown or bronze patches similar to dollar spot patches;

• severe development may mean large yellow areas and a general weakened condition; and

• as season progresses, large areas may wilt, turn yellow to brown, and die.

Control:

1) Maintain extensive and vigorous plant root system.

2) Use management practices to reduce plant stress.

3) Eliminate prolonged wet periods.

4) Use broad-spectrum fungicides sparingly.

5) If necessary, use pythium-labelled fungicides and thoroughly water in. Areas with PPR history should be treated between October and November, followed up by another application in the spring. See chart for effective fungicides.

FUNGICIDES FOR ROOT-ROTTING PYTHIUM DISEASES

Fungicide	Trade Name	Formulation	Rate/1000 sq.ft.
ethazole	Koban	30W	7-9 oz.
		1.3G	8 lb.
	Terrazole	35W	8 oz.
metalaxyl	Subdue	2E	2 oz.
		2G	1.5 lb.
		5G	10 oz.
	Scott's Pythium Control	1.2G	2.5 lb.
phosetyl-al	Aliette	80W	4-8 oz.
proamocarb	Banol	65	2.4 oz

Source: Cornell University Turfgrass Times

Recognizing herbicide injuries to ornamentals

Lawn/landscape herbicides can cause damage to non-target ornamentals.

■ Are the leaves of ornamentals under your care turning yellow and dying? Have you already ruled out disease and insects, and don't have another answer?

Perhaps you should consider herbicide injury as the culprit.

"A lot of other problems can mimic these herbicide injury symptoms," notes Dr. Jeff Derr of VPI-SU's Hampton Roads Ag Experiment Station. "However, there is no cure for herbicide injury. In most cases, the plant will outgrow it."

Some herbicide injury symptoms include chlorosis, bleaching, spotting and distorted growth. Each herbicide has a specific set of injury symptoms that it causes.

Chlorosis is a yellowing effect that can be either veinal, interveinal, marginal or general (see illustration). It is caused primarily by root-absorbed herbicides.

Bleaching occurs when some herbicides are taken up through the plant's roots or leaves. The plant's leaves turn white.

Spotting is a browning of leaves, while distorted growing patterns are generally the result of plant growth regulator injury.

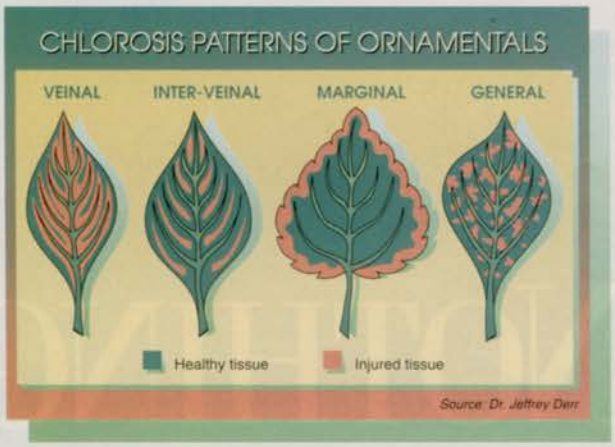
The 2,4-D group of growth regulators produces a distorted appearance, twisting and downward bending. The Roundup group (Roundup, imidazolinone herbicides, sulfonylurea herbicides) of growth regulators produces tip chlorosis and distorted growth, but no twisting.

"Using Roundup in the fall, you may not see symptoms until budbreak next spring," Derr notes.

The dinitroanilines produce root inhibition and occasionally swelling and brittleness of the stem at the soil line.

Amides, anilides and thiocarbamates inhibit roots and shoots.

If you suspect herbicide damage, consult a reference text such as "Herbicide Injury to Trees and Shrubs: A Pictorial Guide to Symptom Diagnosis." (Available from Blue Crab Press, P.O. Box 5055, Virginia Beach, VA 23455-5055.)



Injuries produced by common herbicides

Here are some common herbicides and the types of injury they can produce:

CHLOROSIS: triazines (Atrazine, Simazine), ureas (Karmex, Spike), uracils (Hyvar, Sinbar), Casoron, Norosac, Basagran

BLEACHING: amitrole, Amazine

SPOTTING: diquat, paraquat (Gramoxone Extra), Goal, Ornamental Herbicide 2 (OH2), Rout, Ronstar

DISTORTION: 2,4-D group: 2,4-D, dicamba (Banvel), triclopyr (Garlon), picloram (Tordon), Weedone DPC, Trimec, Turflon
Roundup group: glyphosate (Roundup), Oust, Classic, Escort, Arsenal, Sceptor, Image

ROOT INHIBITION: dinitroanilines (Surflan, Treflan, Balan, XL, Team, Southern Weedgrass Control)

ROOT & SHOOT INHIBITION: amides (Devrinol), anilides (Lasso, Dual, Pennant), thiocarbamates (Eptam)

— Dr. Derr

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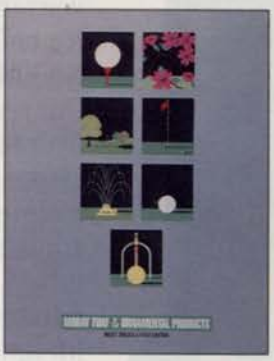

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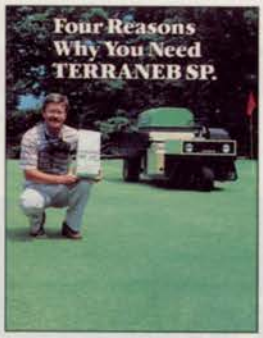

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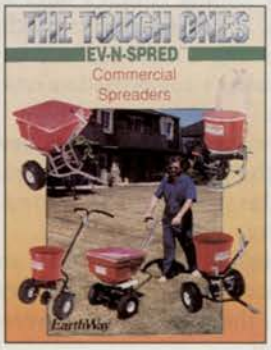

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LAWN CARE INDUSTRY

OLCA prez seeks LCO support

Association-builder Phil Fogarty of Ohio says it's time to consider more state lawn care associations.

■ It's high time lawn care professionals start building their industry from the grassroots level.

So says Phil Fogarty, president of the Ohio Lawn Care Association, which approaches 100 members in only its first year of existence.

"Ohio has been the center of this industry and we should have an association," he says.

Indeed, the development of state lawn care associations which peaked in 1990, could heat again in 1992 as association-builder Bob Andrews becomes president of the Professional Lawn Care Association of America (PLCAA).

Andrews, an LCO in Carmel, Ind., was a driving force in the development of at least five state associations. He recently told the directors of PLCAA that he's considering another regional association development seminar in Indianapolis this December.

It was at a similar seminar in 1989 that Fogarty became involved in planning for OLCA.

Phil Fogarty: every Ohio LCO should join

Fogarty says state and associations are vital to the industry. They offer operational support and advice for member companies, and also deal with local and regional issues as they appear.

Fogarty stresses that these associations must work closely with the PLCAA though.

"This industry needs the PLCAA," says Fogarty, owner of Crowley Lawn Service, Cleveland. "PLCAA's in a position to see the industry's bigger picture, and it has a presence we could never have."

But for any association—even a state association—to be attractive to potential members, it must offer something in return for their support.

Fogarty says industry suppliers generously support OLCA. This allows OLCA to give new members a "welcome package" of discounts and specials on products most LCOs already use.

"There's no reason why any lawn care operator in Ohio shouldn't belong to us right now. They're losing money if they're buying any seed or fertilizer," says Fogarty.

Apart from an immediate financial advantage for joining (OLCA's dues are $50 annually), the association is making headway in getting a more realistic (and less costly) worker's compensation rating for Ohio LCOs.

So far, lawn applicators have been included in the general landscape rating. "The classification is wrong," claims Fogarty.

Given enough members in OLCA and an accurate accounting of the industry's safety record, the rates can be lowered, Fogarty believes.

He adds that OLCA is investigating an insurance package for its members as well.

But, most of all, he says OLCA's goal is to strengthen and help the legitimate operator, no matter how small.

"I'm hoping that the big company versus small company and the state (association) versus the national, and all that baloney stops," adds Fogarty. "We're all in this together and if the states can pull their acts together and they can get the small guys involved, with the big guys helping, we can all benefit."

—Ron Hall

PLCAA seeks $$ for federal issues

■ The Professional Lawn Care Association of America's plea for contributions to its Federal Issues Management Fund attracted contributions from 28 members by September.

It's likely more LCOs, suppliers and state associations have contributed since, increasing the $3,500 collected. as of late August.

PLCAA asked for the money in its Pro Source magazine, and in a separate mailing to members.

The fund was started in response to the senate subcommittee hearings on lawn care this past April.

Prior to the hearings, some of the largest lawn care companies in the country contributed from $5,000 to $40,000 each to mount a strong industry presence in Washington D.C.

The 15 original contributors put up about $130,000.

PLCAA, which is also helping putting money into the fund, says it will need similar financial help next year as well.

INSIDE

Don't blame the economy, page 37

This pickup draws people, page 38

Airwaves carry lawn care tips, page 38

Keep watering trees, shrubs, page 39

Capital trip is Feb. 24-25

■ The PLCAA's "Legislative Days" will be Feb. 24-25 in Washington, D.C. DowElanco has reportedly agreed to help put together the LCOs' working visit to the capital.

PLCAA President Neal DeAngelo has set a goal of 125 attendees, more than double LCO attendance at the 1991 joint pest control/lawn care legislative day.

The 1992 trip to Capitol Hill will be the third for LCOs. As it stands now, there will be no charge for LCOs to participate.

Leaf miner busy in '91

■ Locust leaf miners did a number on locust trees in Ohio this summer, but it's too late to fret about it now.

Craig Weidensaul, a forest pathologist at Ohio State University, said the tiny insect has run its course and you should probably wait until spring before fighting back.

Weidensaul says if you determine treatment is necessary then, a powdered systemic insecticide applied through holes in the ground beneath the trees is probably most effective.

Locusts are tenacious and resilient, he says, and most should pull through.

Infected trees turned brown or bronze early in the growing season.

Canadian LCO/rancher: 'Don't blame economy'

John Robinson says the lawn care market is healthy—if a company's management is healthy too. The key is continually revamping to meet changing market conditions.

■ Several hats fit John Robinson's head, but the one he stands most comfortably under is a cowboy hat.

What's more appropriate head gear for a lawn care professional who lives on—and oversees—a cattle ranch tucked neat as you please between Calgary and the Canadian Rockies? The peaks west of the city sprout handsome, and panel a vista of gold-green rangeland and fresh-mown hay.

From the ranch, Robinson and his lovely wife Katrina can see the mountains like a ribbon running north and south—if the weather's fine that is.

But the ranch, if it doesn't exactly run itself, is, in John's words, "streamlined, a simple operation."

A lawn care company is a friskier business, he says.

He's owner of Green Drop Lawns LTD, one of the largest lawn and tree care companies in Canada.

He thinks lawn care business people—and he makes it clear he's speaking from his own experiences—should look at the internal operations of their companies before they blame anything else. That is, if they feel profit or growth isn't what it should be.

"The market is still there," says Robinson. "Sure, it's easy to say the homeowner doesn't want fertilizer anymore, but that's not the case here and I don't think it's the case across the industry."

Robinson is a product of the range. A third-generation Calgary rancher, he started selling fertilizers to grain and forage growers in and around the city in 1966.

In the late 1970s he began offering liquid fertilizer, and developed and patented a flow divider. His liquid customers could, with the new equipment, apply fertilizer evenly in strips to plant root and moisture zones during cultivation rather than broadcasting, and wasting, product on the soil surface.

The flow divider is now used by growers across North America.

When, about 12 years ago, Robinson looked to the homeowner fertilizing market in Calgary itself, he sought the help of Jim Mello, a Chicago-area businessman with vastly more experience in lawn care. Mello (he still travels regularly from Chicago to review Green Drop operations) helped Robinson put together a ChemLawn-like operation.

"It (Green Drop) took off," admits Robinson.

From a single tank truck in Calgary, the business grew to Edmonton in 1985 and, with the purchase of two companies, one in '88, one in '89, to Winnipeg. (Edmonton is a three-hour drive north of Calgary. Winnipeg is in Manitoba Province, maybe 100 miles straight north of the Minnesota/North Dakota state line.)

Meanwhile, as Green Drop expanded in the mid—1980s, Robinson revamped the company to meet changing market conditions.

By converting Green Drop's product delivery system to low volume, technicians could then use a third or less as much product as they had been using.

And, by equipping heavy-duty pickup trucks with dual tanks—one for fertilizer, one for control products—and equipping applicators with dual hoses for spot treat-

John and Katrina Robinson at their Calgary ranch. Robinson's Green Drop expanded into Edmonton and Winnipeg, and added tree services.

ments (weed control usually) instead of blanket applications, Green Drop significantly reduced both service delivery and product costs.

"The changes allowed us to get more production out of every truck and still carry about 70 percent less product," says Robinson.

If all Green Drop management's decisions had been as foresighted, Robinson admits he certainly couldn't speak from the perspective he now does.

For instance, the company's Winnipeg operation had "some rocky times" this past season, says John.

"We could blame the economy and other factors, maybe even the environmental factor, but I don't think we should use them as scapegoats."

Instead, he's looking for "hiccups" in his program.

The market's there, he's convinced, and Green Drop will find a way to satisfy it.

"After all, we bought two companies there (Winnipeg)," he says. "We changed the name; there was new management; we changed the program."

Tellingly, the Calgary and Edmonton operations had good seasons.

Says Robinson: "If you really look at the success of a business, really look deeply, it usually comes back to internal changes you make or you don't make."

—Ron Hall

Turfed truck attracts the curious, new customers

Here's a nifty idea that's used to attract possible customers. It's a product of a fertile imagination—not to mention some fertile grass.

■ John Kroll wanted to show prospective customers that his Montane Landscape Company can grow grass just about anywhere.

So he "grew" a truck, a pickup truck covered with Kentucky bluegrass/creeping red fescue sod.

This GMC (Grassy Motor Contraption) pickup truck generates a lot of interest at Montane Garden Center.

"We might have 20 people a day stopping to photograph it, and maybe five of them stop in to the garden center to ask about it. It's good for business." says Cam McTavish, who works in the nearby Montane Garden Center.

Establishing nice lawns is difficult in the company's market area, the Canmore Valley which cuts through the east face of the Canadian Rockies about 30 miles west of Calgary. The soil is silty, basically glacial deposit.

"We wanted something to show how good we are with grass," he explains. "We thought about growing grass on plywood and we had some other ideas, but then we realized we could use this old beater of a truck—it's a GMC I think."

The truck ("Yes, I'm pretty sure it still runs," says McTavish) is parked near the Montane Garden Center on the outskirts of Canmore, Alberta, Canada, population about 6,000.

Montane Landscaping is a full-service landscape firm servicing several small communities just west of Calgary.

How did Montane Landscape get the sod to stick to the truck?

"Its a secret," says McTavish, "but the body of that truck must be perforated with a zillion screw holes."

The truck is watered three times a day to keep it green.

Yea, but, how often is it mowed?

—Ron Hall

Airwaves to carry lawn/landscape tips

John Deere's Bob Tracinski reveals an electronic campaign to rekindle pride in home lawns.

■ An ambitious campaign to reinvigorate pride in home lawns sprouts this spring.

A by-product of the effort—indeed, its goal—will be to promote the Professional Lawn Care Association of America (PLCAA) as a helpful and knowledgeable spokes-organization for lawn care.

The effort is informational and involves five 60-second public service announcements (PSAs) for radio and one for television. Production of the announcements began in September and should begin popping up on radio and television in early spring 1992.

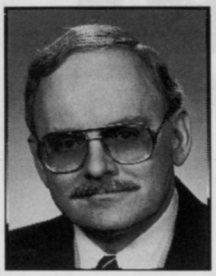
PLCAA directors late this summer endorsed

the program outlined by Bob Tracinski, longtime communications specialist with John Deere & Co. Tracinski spoke in behalf of PLCAA's Public Relations Committee, of which he's a member.

The campaign's message reinforces the idea that lawns are great. "People work very hard to buy and own properties with beautiful lawns," Tracinski said.

John Deere is reportedly financing the initial batch of PSAs, but Tracinski said the PLCAA committee seeks other sponsors to expand the program.

The radio PSAs discuss "Grasscycling," proper mowing techniques, mowing safety and landscaping tips. The television PSA deals with "Grasscycling," PLCAA's nationwide program to keep grass clippings from landfills.



Bob Tracinski says radio/TV messages can reach millions.

Tracinski said similar PSAs generated by John Deere & Co were extremely well received by radio and television. One produced in cooperation with the National 4-H Council was telecast a total of 4,200 times at 115 different television stations. It dealt with mower safety.

(John Deere benefits by having its equipment shown being used during the narration.)

Along with radio and television, the PLCAA committee also hopes to reach 1,050 newspapers and magazines with printed lawn care information.

"I think this idea of reinforcing pride in home lawns is very powerful," said Tracinski.

Keep watering until freeze

■ Everyone knows how important water is to lawns, but trees and shrubs are sometimes overlooked.

Marianne Riofrio of Ohio State University's Consumer Horticulture Center says trees and shrubs that suffered through extended dry weather this summer should get a good weekly watering, at least until the ground freezes.

Signs of drought stress include:

- early fall color,
- fallen leaves and
- droopy foliage.

"The trees aren't dead," says Riofrio. "Leaves have been on the trees long enough for them to manufacture a good deal of food for the roots."

Even so, trees and shrubs will need all the help they can get before winter.

"A cold, dry winter would further weaken trees and shrubs," she explains. Those also suffering from disease or soil compaction could even die. Many trees and shrubs planted this past spring have already died because of the lack of rain.

Because one deep watering can take hours, start with the trees and shrubs most in need, she advises. Evergreens, especially ones with broad leaves, should be next on the list.

Because evergreens lose water from their foliage year-round, Riofrio recommends spraying them in early December (in Ohio) with an antidessicant spray. The spray can be reapplied in January or February according to label directions.

"WE SPRAYED 62,000 ROSES WITH WILT-PRUF AND LOST LESS THAN 50!"

– Tony Notaro, owner, Larchwood Construction Co., Holtsville and Rochester, N.Y.

Tony Notaro's landscaping business has grown from zero to one of the 25 largest in the nation in just 32 years.

Tony and daughter Kathy inspect a juniper before planting.

Notaro was landscape contractor for the Levittowns, planting 14,000 homes on Long Island, 5,000 in Delaware and Virginia and 3,000 in Florida. He most recently completed a million dollar landscape renovation of the Flushing Meadow Zoo in New York City. That landscape includes rare and exotic plants, plus wildflowers and other meadow grasses.

"We transport and plant lots of 12-to-24 inch caliper trees," Notaro said. "The nursery digs and tags the trees. Our standard procedure is to require the supplier or grower to spray the trees with Wilt-Pruf before we start to dig. We like to hold freshly dug trees in the shade for about 10 days and keep the wrapped ball wet on each tree during the entire period."

Notaro takes pride in his landscaping business. That's just one of the reasons he uses and recommends Wilt-Pruf.

Wilt-Pruf is the proven way to reduce moisture loss and drying out when plants are under stress. Order from your distributor today.

A longtime member of the Associated Landscape Contractors of America (ALCA), Notaro encourages landscapers to join ALCA to stay up-to-date on technical knowledge and exchange information.

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HOT TOPICS

Green Industry Conference & Show

features co-keynoters, lots of exhibits

Strategists Josephine S. Cooper and Jay Conrad Levinson will be the two keynote speakers at the annual Green Industry Expo.

TAMPA, Fla.—The Green Industry Expo, sponsored by three professional associations—the Professional Lawn Care Association of America (PLCAA), the Associated Landscape Contractors of America (ALCA) and the Professional Grounds Management Society (PGMS)—will be held here Nov. 17-21.

Cooper is a senior principal with the Capitoline International Group of Washington, D.C. She will address the challenges lawn care professionals face in influencing future legislation through an active united lawn care industry.

Conrad is a representative of Guerrilla Marketing International of Mill Valley, Calif. He will be speaking on "new strategies, tactics and weapons for winning big profits from your business."

Other featured speakers are George Toma of the Kansas City Royals, Ben Bolusky of the American Association of Nurseymen, Bill Vaughn of the Walt Disney Co., Paul Skorupa of Pesticide Compliance & Training, and a bevy of technical experts from the nation's major land grant universities.

A trade show featuring more than 250 exhibitors will be held in conjunction with the GIE on Nov. 19-20. Outdoor power equipment demonstrations are scheduled for Thursday, Nov. 21. Service workshops will be held, at no extra cost, on the exhibit hall floor of the Tampa Convention Center by leading manufacturers.

And, all exhibitors and registrants are invited to attend the Green Industry Expo evening reception, Monday, Nov. 18.

For more information, contact the PLCAA at (404) 977-5222, the ALCA at (703) 241-4004 or the PGMS at (301) 667-1833.

New homeowners love lawn care and landscaping

WESTBURY, N.Y. — More than one out of three new homeowners (33.5 percent to be exact) enlist the services of a landscape or lawn care company during their first six months in the home, according to a new study.

"The new homeowner market is a prime target for the landscape and lawn care industry," says executive vice president Stuart Siegel of Getting To Know You International, which commissioned the study. "New homeowners are an affluent, educated and upwardly mobile group of professionals, executives and entrepreneurs. The majority are married and have children living with them in the new home, the study says. (See chart for further statistics.)

Many landscape and lawn care services nationwide use the Getting to Know You program, according to the company. The program features a housewarming gift delivered to the new homeowners that includes a personal telephone/address directory and gift certificates from local merchants.

For more information on Getting to Know You International, which serves 37 states, call Joanna Piccirillo at (800) 255-4859.

'GETTING TO KNOW YOU' • SURVEY OF NEW HOMEOWNERS

Characteristic	Male	Female
Avg. age	38.1 yrs.	37.0 yrs.
Professionals	73.6%	49.3%
College degreed	60.1%	51.7%
Characteristic	**Household**	
Avg. income	$59,000	
Currently married	77.2%	
Children?	58.2%	

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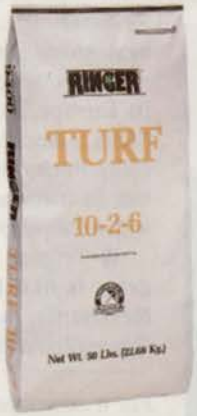

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New seed varieties show some resistance

CLEVELAND—The green industry's leading seed companies have reported to LANDSCAPE MANAGEMENT the release of at least 10 new varieties. Most will have limited availability in their first year.

● Lesco's Trailblazer II is a dwarf, dark green variety of turf-type tall fescue, available in limited supply for fall 1991. Trailblazer II has reportedly shown excellent resistance to leaf spot, crown rot, brown patch as well as producing good cold, wear and shade tolerance and excellent drought tolerance.

Doug Brede: Says industry may see a hybrid bentgrass by mid-decade, for home lawns in the North. It would also be better suited to Southern heat.

● New tall fescue varieties from Turf Seed are Eldorado, Tomahawk and Safari. But Dr. Bill Meyer of Turf Seed says the company is being cautious when it comes to new varieties. "There's less demand for new varieties than there was a few years ago," says Meyer, "so we're being very selective about what we're putting our name on."

● Winchester and Thunderbird are two new semi-dwarf varieties. Both are reported to have "excellent" disease resistance, especially to brown patch.

● Turf Merchants will most likely develop a "mini" Bonsai variety, says researcher Fred Ledeboer, who adds that he has had success in developing a Bonsai plant with endophytes. Ledeboer says even shorter-growing tall fescues are on the horizon, varieties that will attain a maximum height of about two feet.

● Legacy dwarf turf-type perennial ryegrass exhibits low growth habit, fine texture and very dark green color. A 94 percent endophyte level. providing resistance to above ground feeding insects. Legacy is demonstrating high performance in all turfgrass tests under low as well as high maintenance levels.

● Edge ryegrass, says Pickseed West's Dr. Jerry Pepin, has 100 percent endophyte. It can be used in blends and mixes.

"We're looking for low-growing ryegrasses, too," says Pepin. "They seem to produce more growth. Ryegrass will be our biggest species because there are so many uses for them. Low-growing is less maintenance, less fertilizer, less water..."

Shamrock, a new hybrid Kentucky bluegrass, exhibits improved disease tolerance, dark green genetic color, very dense fine turf with a relatively low growth habit, and improved resistance to leaf spot and rust.

● Doug Brede of Jacklin Seed Co.'s research division reports that J-386 Kentucky bluegrass—now in the works—will be a "top variety." He is also at work on a hybrid bentgrass species for home lawns in the North. Some of these bunch-type grasses are "very acceptable" for low-maintenance grasses in the South. Brede promises a definite report on Agrostis by 1995.

● Supra *Poa supina* bluegrass is new to the U.S., reports Bill Junk of Fine Lawn Research, Inc. "It is the best shade species and number one sports grass in Europe," says Junk. Supra is described as especially thick, highly resistant to traffic and disease, with minimal growth.

● Tropica bermudagrass is new from Turf Merchants, as well as Cypress *Poa trivialis*.

Fred Ledeboer: Tall fescues can tolerate some skips in fertilization, but don't take them for granted.

For a complete listing of the various seed marketers and brands, see our survey beginning on page 12. For an update on endophyte research, see our exclusive on page 26.

Plant bulbs now for spring flowers

BROOKLYN HEIGHTS, N.Y.—If you've got landscapes in which you want to incorporate flower bulbs for next spring, fall is the time for planting.

Good drainage is absolutely essential for spring bulbs, advises the Netherlands FlowerBulb Information Center, headquartered here.

Sandy soils are best, but if your soil is mostly clay, mix in some organic matter such as peat moss. The peat not only provides better drainage, but it also loosens the soil so the actual bulb planting is easier.

The basic rule of thumb to determine proper planting depth and spacing:

- Eight inches deep, three to 10 inches apart for large caliber bulbs (like tulips, narcissi and hyacinths) that are two inches or more in diameter.
- Five inches deep, spaced one to two inches apart for smaller bulbs (like crocus, grape hyacinth, scilla or galanthus) that are one inch or smaller in diameter.

After planting, it's important to water generously to get root growth started. For bed plantings, it's good to add two to three inches of mulch like pine park, once the ground freezes.

Bulbs should be planted before the first hard frost, which could be just around the corner. However, if you find yourself with unplanted bulbs after the cold weather has arrived, you can plant them anyway. They won't keep indoors: too much heat can kill them, too much moisture can cause rot or fungus.

But in the ground, they'll probably surprise you and flower come spring.

Drifts of dewy daffodils come up each spring in no-fuss naturalized plantings if you can plant them before the first freeze sets in this fall.

EPA is happy with 'friendliness' of golf courses

WASHINGTON, D.C.—An Environmental Protection Agency (EPA) official believes the golf industry is doing "a number of positive things" when it comes to being kind to the environment, but must continue to make golf courses "environmentally friendly places."

Lewis Crampton, an agency associate administrator, says cooperative efforts by the EPA and the Golf Course Superintendents Association of America (GCSAA) are a sign that golf is "on the right course."

"It's only natural that golf course superintendents be leaders in environmental stewardship," says GCSAA president Stephen Cadenelli, CGCS. Cadenelli says the golf industry has worked for a number of years to insure that the public and government understand how golf courses are managed to prevent negative effects on the environment.

Apparently, someone hasn't been paying attention.

The latest EPA campaign involves improving what it believes to be improper use of the nation's wetlands. John Studt of the U.S. Army Corps of Engineers says existing wetland areas should be integrated into golf course plans when possible.

"Incorporating these areas as open green space and hazards is something you should strive for," says Studt, who also says the wetlands permit process should be streamlined. "Streamlining the program and making it run better, and getting decisions for applicants sooner is something we are trying to strive for," says Studt.

Crampton spoke at a seminar entitiled "Golf Course Management, Government Regulations and the Future."

Dogs endangered by lawn herbicide, report states

WASHINGTON, D.C.—The National Cancer Institute has released yet another study incriminating the lawn herbicide 2,4-D as being a cancer-causing agent—this time in dogs.

The report said that dogs were twice as likely to develop a cancer called lymphoma if their owners sprayed or sprinkled the herbicide on their lawns four or more times per year.

"The study also suggests that the potential health hazards of human exposure to 2,4-D at home warrant further study," said Howard M. Hayes, the primary author of the study.

Earlier studies by the National Cancer Institute had noted "strong links" between non-Hodgkin's lymphoma in humans and 2,4-D. But those studies were refuted by subsequent reports commissioned by the Environmental Protection Agency and the Ontario (Canada) Minister of the Environment.

News of the NCI's study was reported by the major news services and the national newspaper *USA Today*. Industry professionals say the report was poorly researched.

Bentgrass gains popularity on public courses

AKRON, Ohio—A newly-opened public golf course in Ohio is attracting attention with its bentgrass fairways.

"It's unusual for a public golf course in this area," says Ed Breckenridge, superintendent at Raintree Country Club between Canton and Akron.

The club opened in July in the midst of a drought that plagued much of the region.

"We didn't have much of a problem at all" keeping the fairways and the rest of the course in great playing shape, says Breckenridge. A 400-head Toro Irrigation system provided adequate water.

The tees and fairways are planted with Pennway bentgrass, which is mowed at a height of 3/4ths inch by Ransomes 350-D mowers. Pennlinks greens are mowed at 3/16th inch with Toro triplexes.

Turf-type tall fescues are used in some roughs. This will help produce a tall-grass "heather" look that's popular overseas, says Breckenridge. The course also has dunes along the lines of those found in

continued on page 44

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Bentgrass *continued from page 43*

England, Scotland and Ireland.

"The only problem down the road will be clippings and susceptibility to disease." A finely-tuned maintenance program is likely to eliminate those concerns, he points out.

A broadleaf weed killer from Lesco is sprayed on the bent, and "everything that gets irrigation water is fertilized" to insure lush growth.

Dirt cart paths are being converted to concrete, and construction of a 20,000 square-foot clubhouse will be finished by next March. The building of 115 homes surrounding the course begins in the spring.

—James E. Guyette

USDA busy looking for scale controls

MADISON, Va.—The Animal and Plant Health Inspection Service of the USDA is working to reduce the occurrence of euonymus scale on landscape plants.

The euonymus scale is a sucking insect found throughout the temperate zone, wherever euonymus species are grown. Its hard shell makes it virtually immune to pesticides. Some miscible oils have been successful against the scale during early spring, according to Ray Brush, a member of the project's advisory committee. He is also the American Association of Nurserymen's consultant on quarantine procedures.

Brush says infested plants will exhibit a white residue on stems, which is actually the shell of the male euonymus.

A scale feeding predator, a ladybug-type beetle, and a small parasite which attacks the scale under its shell are to be used in the initial stages of research.

"Both have shown great promise," says Brush.

He adds that those and other biological control predators will be nurtured at the inspection service's National Biological Control Laboratory in Niles, Mich. Federal and state departments of agriculture, state experimental stations and industry will participate.

"We're trying to find out which of the species of euonymus and which cultivar are being used in various states, and what sort of scale problems they are having with it," explains Brush.

Brush is busy distributing a four-question survey which seeks information from the field regarding the degree of euonymus infestation around the country.

To participate in the survey, contact Ray Brush at P.O. Box 266, Madison, VA 22727; (703) 948-6436.

Correction

■ Two items in our August issue's "Fall Fertilization Guide" require clarification.

The photo caption on page 32 should read: "Fertilizing less than 30 days before a frost may result in low temperature kill..."

On page 33, under the subhead, "Rates and ratios," the amount of actual nitrogen per 1000 sq. ft. should read 1/2 lb., not 1-1/2 lb. actual nitrogen. Likewise, the amount of actual nitrogen suggested on page 34 should read 1/2 lb.

We apologize for any confusion caused by the mis-information.

'Fingerprinting' could help in disease diagnosis

KNOXVILLE, Tenn.— A University of Tennessee researcher says a cheaper, more accurate, safer and faster method for providing "fingerprinting" has been developed, and its application to turfgrass cultivars "would be a major contribution to grass genetics in this century."

Principal investigator Dr. Lloyd Callahan, a professor at the school's ornamental horticulture and landscape design department, says the DNA Amplification Fingerprinting (DAF) method developed here should have a number of far-ranging applications, not the least of which is the means of legally establishing genetic individualism for new strains of grasses. The method could be used to protect turfgrass breeders from commercial theft of new varieties.

Fingerprinting is also useful in disease diagnosis and breeding.

Callahan has written that DAF will be adapted to both cool- and warm-season grasses and primary cultivars, and is being applied to bermudagrass, bahiagrass, buffalograss, centipedegrass, St. Augustinegrass and zoysia, bentgrass, fine fescues, Kentucky bluegrass, perennial ryegrass and tall fescue.

More than 200 other turfgrass cultivar samples will be tested using a similar DAF method also under study by University of Tennessee researchers.

Callahan and researchers have already performed the service for about a dozen companies and also provided a fingerprint for a cultivar to document that it could pass through a state which had questioned its compliance with quarantine laws.

Florida nurseries unaffected by bad batches of fungicide

ORLANDO, Fla.— Florida's environmental horticulture industry still has an ample supply of nursery plants available, despite damage caused by a contaminated fungicide which appears to affected an estimated 400 nurseries statewide.

Earl Wells of the Florida Nurserymen and Grower's Association, said that the 400 nurseries represent about six percent of the state's 6,939 non-citrus nurseries.

Wells said that price adjustments have not skyrocketed due to the plant losses.

"DuPont Agrichemical Co. officials continue to research a specific cause for the plant damage, but to date have not release any positive findings," the FNGA said in a press release.

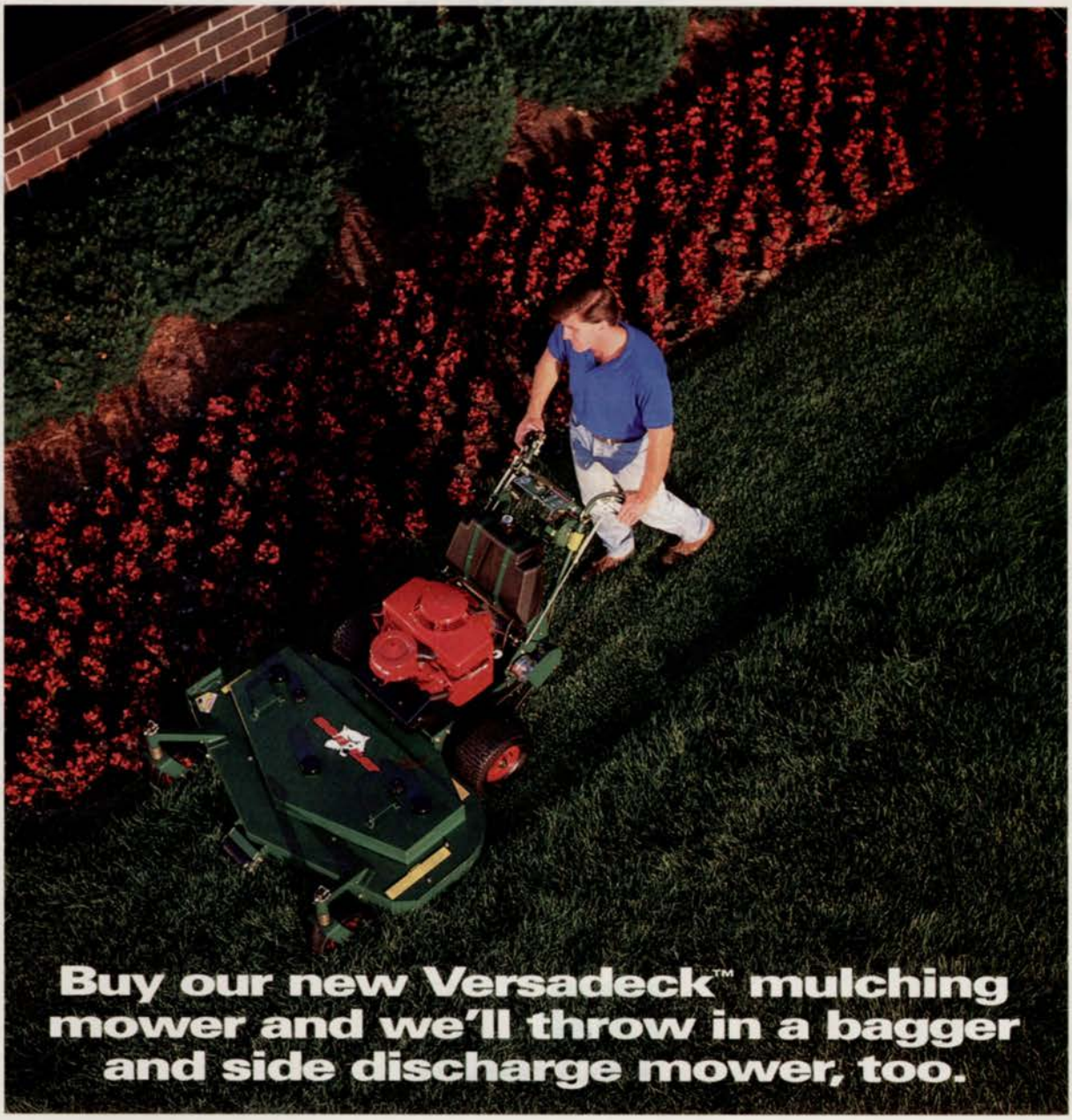
Saving tax money by leaving clippings

PASSAIC COUNTY, N.J.— County officials here have begun a public relations campaign to convince residents to leave their grass clippings in the ground. Their ploy is to play up the taxpayer savings: $2.4 million in annual landfill and transport fees.

The Troy-Bilt Co.of Troy, N.Y.—one of a few companies now making either a mulching mower or attachment—is getting in on the action by offering technical and hardware assistance.

The "Grass...Cut It and Leave It" message is to leave grass clippings on the lawn or cut the lawns with mulching mowers, the green industry's newest piece of environmentally friendly equipment.

Troy-Bilt has donated one mulching mower to each of the counties 16 municipalities, to be used as demo-models.



Buy our new Versadeck™ mulching mower and we'll throw in a bagger and side discharge mower, too.

It's true. Because the new VERSADECK™ Convertible mulching mower is really three mowers in one. For turf care professionals who are sensitive to homeowners' growing environmental concerns, it's a high performance mulching mower. And for those times when conditions make mulching impossible, the deck can be easily converted to bagger (with optional grass catcher) or side discharge in just minutes. ■ Available in both 36" variable speed and 54" gear drive models, this unit features the power of 14HP and 18HP Kohler air-cooled gas engines. Plus, new ergonomic operator presence control, top-mounted spindles with sealed bearings, and a blade brake. And, it's all backed by the guaranteed parts and service support of Ransomes Priority Parts Network. ■ So call your Ransomes dealer today or call us at 414-699-2000 to arrange a free demo. Because once you've experienced the performance and flexibility of the VERSADECK™ Convertible, you'll never want anything else.

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SERVICE TIPS

ABCs of telephone courtesy

This column will present monthly tips on various actions which will help you in dealing with customers, and will make your company more effective in providing quality "customer service."

■ When you receive a phone call from a customer, he or she is a voice without a face.

Over the phone, the spoken word is your only method of dealing with the customer. This means you must be prepared for each and every phone call. To improve your customer service effectiveness on phone calls, try this method:

1) Keep your desk organized. When a customer calls, the customer service representative can better focus on what the customer has to say.

2) Have a sign near the phone that reminds the customer service representative to *smile* as they answer the phone. Some companies have a smile face or the words, "customers make paydays possible," printed on a card near the phone or on the wall in front of the individual answering the phone.

3) Relax for a couple seconds before taking the call, to prepare yourself to meet a customer over the phone. Take a deep breath, or clear the desk to prepare to concentrate on the customer.

4) Have your customer service representatives pretend the customer is seated in front of their desk. This will encourage the customer service individual to sit up straight, and to be more attentive.

5) Have forms or specially colored note paper for customer service calls. Attention to notes and not talking initially during a customer service phone call will emphasize your interest about the customer and their concerns.

—Ed Wandke

—The author is a senior partner in PC Systems Services, Columbus, Ohio. Next month: how to talk to a customer.

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For another, we provide complete training and back-up support. Programs like discount purchasing. A 1-800 hot line for special agronomic questions. Year-round marketing support that will help you get business even in winter.

Over 90% of our ServiceMaster franchises are still going strong after three years. In fact, *Fortune* magazine has named us No. 1 for return on equity in their ratings of the 500 top service companies in America.

So if you're looking for the right opportunity to start your own lawn care business, you simply can't find a company with a more consistent record for success.

If you qualify, you could get started in a ServiceMaster LawnCare franchise for as little as $8,200 plus additional working capital.

You can start out while still keeping your regular job if you wish.

For more information, call Bob Morris toll-free at 1-800-228-2814.

ServiceMaster LawnCare

Partners in the ServiceMaster Quality Service Network.

ServiceMaster. TERMINIX. merry maids.

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INFO CENTER

MARKETING TIPS.. "Practical Marketing Tips for the Landscape Company" is a 90-page workbook containing how-to information on helping landscape contractors attract and retain good customers. The author is James H. Mitchell, an associate of the Landscape Horticulture Center for Personnel Development, Los Angeles. Copies are $19.95. To order, call (800) 359-6647 or send a check plus $3 for shipping and handling to: Landscape Horticulture Center, 2509 E. Thousand Oaks Blvd., #109, Westlake Village, CA 91362.

VIDEO TRAINING..."For Every Season" is the first green industry video journal providing training on pesticide safety and horticultural practices for lawn care, landscape and grounds. Each tape, hosted by Mark Timmons and Meg Southerland, runs 20 minutes. Six videos spaced throughout the year are $240 plus shipping. Visa and MasterCard accepted. To order, write "For Every Season," 105 Lyndon Lane, Louisville, KY 40222 or phone (502) 425-8121. Fax is (502) 425-8154.

TREE FELLING ILLUSTRATED...A brochure that describes proper techniques for tree felling and limbing is available from Husqvarna. The four-color, 32-page brochure was written by forestry engineers. For a *free* copy of "Work Technique for Felling and Limbing," write Husqvarna Forest & Garden, 907 W. Irving Park Rd., Itasca, IL 60143 or telephone (708) 773-2777.

READING SPARK PLUGS... The Champion Spark Plug Division of Cooper Industries has introduced "How to Read a Spark Plug," a 16-page reference booklet to help identify engine problems by analyzing the color, gap and deposits found on a spark plug. It is also available as an 18- by 30-inch poster. For your *free* copy, contact your Champion representative or write Champion Spark Plug, P.O. Box 910, Toledo, OH 43661.

DESK REFERENCE...The Professional Grounds Management Society is offering its revised "Grounds Maintenance Management Guidelines" for $12 to non-members. It is *free* to members. The manual includes maintenance standards, operating manuals, contract specifications, etc. To order, send check payable to P.G.M.S., 10402 Ridgland Rd., Suite 4, Cockeysville, MD 21030.

ON WATER CONSERVATION... A *free* 12-page booklet, "Every Drop Counts" is now available from Easy Gardner Inc. It was designed as a guide to water-conscious gardening for the homeowner, but contains information of interest to landscapers like lists of drought-tolerant plants. For your copy, send your written request to P.O. Box 21025, Waco, TX 76702.

SMALL BUSINESS SOFTWARE...New England Business Service's "Directory of Software, Vol. 3" is now available *free* to anyone requesting it. The 112-page publication lists how to obtain more than 850 software packages currently on the market that are suited especially to small businesses. For your copy, call NEBS' Customer Service Department at (800) 225-9540.

CHEMICAL REFERENCE... "Turf & Ornamental Chemical Reference," a new annual subscription guide, is available through John Wiley & Sons/C&P Press for $105. The 930-page volume is designed to meet the needs of professionals maintaining golf courses, lawns and grounds, parks, nurseries and other outdoor areas. It contains product labels and material safety data sheets supplied directly by manufacturers. For more information, call John Wiley & Sons/C&P Press at (212) 850-6484.

ORGANIC MANUAL...Howard Garrett's new book is a complete reference guide to landscaping and gardening using organic techniques and products. It contains specific tree, lawn, shrub and flower care programs; including 100 illustrations on 104 pages. To order, send $11.95 to Lantana Publishing, P.O. Box 140650, Dallas, TX 75214.

SAFETY TRAINING... Horticulturist Pete Howes has published a pesticide safety training booklet titled "A Little Common Sense on Pesticide Use." It is available in both English and Spanish for $1.99 per copy. Additional information may be obtained from Howes at 1761 Lorenzen Dr., San Jose, CA 95124; (408) 267-8756.

TO WIN AWARDS...The National Landscape Association has released a new videotape entitled "Award-Winning Landscape Designs." The tape offers creative landscape ideas and techniques, use of color and texture, selection and arrangement of plant material, and more. The tape may be used to increase sales through marketing and is great for presentations, trade shows and garden center showrooms. For a *free* detailed brochure about the tape, contact David Peiffer, NLA, 1250 I St. NW, Suite 500, Washington, DC 20005; (202) 789-2900.

PEST CONTROL... For advice on how to control gypsy moths and other pests, nursery operators and landscapers may want to consult "Woody Ornamental Pest Control Suggestions 1991" from Penn State University's Department of Agriculture. The guide sells for $7. Write Publications Distribution Center, 112 Ag Administration Bldg., University Park, PA 16802 or phone (814) 865-6713.

ON EMPLOYEE TRAINING... The Georgia Extension Service has just completed the second in a series of employee training videos for landscape professionals. It is called "Planting Procedures for Ornamental Plants." Step-by-step transplanting procedures for trees and shrubs are shown, with emphasis on site analysis before planting, proper soil preparation, plant spacing, depth and the importance of water and mulch. To order, send a check for $24.95 to DeKalb Extension Service, Attention: Video, 101 Court Square, Decatur, GA 30030.

ACCOUNTING SYSTEMS... The Associated Landscape Contractors of America has available a book called "Designing Your Accounting System." It is a "how-to" text written by Frank Ross, president of Ross-Payne Associates. Price is $15 for ALCA members and $25 for non-members. Mail orders to ALCA, 405 N. Washington St., Suite 104, Falls Church, VA 22046. Visa or MasterCard orders are accepted by phoning (703) 241-4004 or faxing to (703) 532-0463. Please include your credit card account number and expiration date.

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"Twenty-five years ago when I was just getting started in landscaping, I got my first Gravely. It was a two-wheel convertible and that tractor was my bread and butter. Today, I handle the landscaping at Opryland. And I need machines that jump curbs, get in and out of tight spots, and help do a million chores. I have a bunch of Gravelys — riders, walk-behinds, plus a lot of attachments. It's not just sentiment, either. Gravely makes my kind of equipment. Rugged machines that can run all day long. Over the years, I've had a lot of different Gravelys. And not one has ever been out of tune."

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Hollis Malone

Hollis Malone
Chief Horticulturist and Landscape Manager
Opryland Hotel

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GREEN INDUSTRY EVENTS

OCTOBER

13-16: Florida Turfgrass Association Convention 1991. Jacksonville, Fla. Contact: The Florida Turfgrass Association, 3302 S. Graham Ave., Orlando, FL 32803-6399.

15: Target Specialty Products fall seminar and exhibit, Radisson Hotel, Sacramento, Calif. Contact: Target, (213) 865-9541.

16-18: Southwest Turfgrass Association Annual Conference, Farmington Civic Center, Farmington, N.M. Contact: Lynn Ellen Dixon, 9301 Indian School Rd. NE, Albuquerque, NM 87112; (505) 275-2576.

17-18: Xeriscape '91—San Diego Style, San Diego Convention Center. Contact: Jan Tubiolo, Cuyamaca College Botanical Society, 2950 Jamacha Rd., El Cajon, CA 92019; (619) 443-1756.

17-19: American Society of Consulting Arborists Annual Meeting, Sheraton Old Town Hotel, Albuquerque, N.M. Contact: ASCA, 3895 Upham St., Wheat Ridge, CO 80033; (303) 420-9554.

22-25: ALCA Interior Plantscape Division Conference and Trade Show, Opryland Hotel, Nashville, Tenn. Contact: ALCA, 405 N. Washington St., Falls Church, VA 22046; (703) 241-4004.

23-25: Ohio Landscapers Association short course: Beginning Design for Residential Properties. Contact: OLA, (216) 659-9755.

DON'T MISS THE NATION'S LARGEST REGIONAL TURF SHOW

OTF

25TH ANNUAL CONFERENCE & SHOW

The Ohio Turfgrass Foundation is proud to sponsor the 25th Annual OTF Conference And Show in Cincinnati, Ohio, December 2-5. This year marks the silver anniversary of the OTF show and is sure to be the most exciting ever.

THE REGIONAL SHOW THAT APPEALS TO PROFESSIONALS NATION-WIDE

In 1990, professional lawn care, golf course, maintenance, athletic field, and public turf managers came to Cincinnati from 35 states.

They'll be in Cincinnati again this December to learn from the industry's top experts, to share ideas with over 4,000 other pros like themselves, and to take a close look at one of the nation's largest displays of equipment, turf care products and supplies available to the turf industry.

FOUR OF THE MOST ACTION-PACKED DAYS OF THE TURFGRASS YEAR

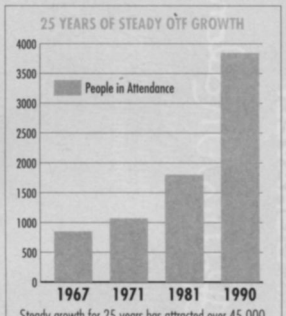
Whatever your business or career, you'll find what you need at OTF. The huge show floor of the Cincinnati Convention center will be filled with all the tools of your trade. The educational conference includes university researchers and industry professionals offering sessions and workshops on:

- Golf Turf
- Lawn Care
- Grounds Maintenance
- Sports Turf

Many of these sessions qualify for pesticide recertification credits.

NEW! FOR THE '91 OTF SHOW

New for 1991 will be **Buckeye Beer Garden** on the show floor, and a **Silent Auction** to give you the chance for some fantastic bargains. Be there, and join the fun!



Steady growth for 25 years has attracted over 45,000 green industry professionals to the OTF. Plan now to be in Cincinnati December 2-5 to help celebrate 25 years of industry excellence.

YES! PLEASE SEND MORE INFORMATION ABOUT THE 1991 OTF CONFERENCE & SHOW.

Check appropriate boxes:

- ❑ I'm interested in exhibiting
- ❑ I'm interested in attending
- ❑ I'm interested in OTF membership

Name

Company

Address

City State Zip

Phone

DETACH AND MAIL TO: Ohio Turfgrass Foundation
2021 Coffey Road
Columbus, Ohio 43210
614-292-2601

OTF
OHIO TURFGRASS CONFERENCE & SHOW '91

CINCINNATI, OHIO • DECEMBER 2-5, 1991

Circle No. 114 on Reader Inquiry Card

NOVEMBER

5-8: New York State Turfgrass Association Turf and Grounds Exposition, Rochester, N.Y. Contact: NYSTA, at (800) 873-8873; (518) 783-1229.

9-11: New Jersey Shade Tree Federation, Annual Meeting, Sheraton Poste Inn, Cherry Hill, N.J. Contact: Bill Porter, (908) 246-3210.

10-13: International Irrigation Exposition, San Antonio (Texas) Convention Center. Contact: Melanie House, c/o The Irrigation Association, 1911 N. Fort Myer Dr., Suite 1009, Arlington, VA 22209-1630; (703) 524-1200.

11-13: Penn State Golf Turf Conference, Keller Conference Center, University Park, Pa. Contacts: Dr. Joseph Duich, Dept. of Agronomy, 116 ASI Building, University Park, PA, 16802; (814) 865-9853; or Pa. Turfgrass Council, P.O. Box 1078, Lemont, PA, 16851-1078; (814) 863-3475.

Dormant feed with Milorganite this fall,
#1 Fairway
Milwaukee Country Club
Milwaukee, Wisconsin
Dormant fed Milorganite - Photographed March 25th

And see results like this next spring
Here's the same fairway 30 days later. Photo taken April 25th showing early green-up effect of dormant fed Milorganite.

Why Dormant Feed Milorganite?

Reduce Operating Costs

You'll save time and money. Apply Milorganite in late fall for efficient labor and nutrient use. More time is available for you and your staff in late fall, and spring time crunches will be avoided when you dormant feed Milorganite.

The W.I.N. Factor

Dormant applied Milorganite does not burn, leach, or lose its nutritive value due to a 90% Water Insoluble Nitrogen (W.I.N.) factor.

Rich In Chelated Iron

Your turf will look great. Milorganite provides 4% min. iron and a full package of nutrients. That means an early spring green-up without excessive growth, with the iron content carrying the rich color well into the heat of summer.

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Circle No. 111 on Reader Inquiry Card

JOB TALK

Instant landscapes? Move trees

■ Ever hear of "instant landscaping?" It's a landscape design meant to look very well established, even if it's just 10 minutes old.

Dennis Higbie, landscape manager at the Walt Disney MGM Studios in Orlando, Fla., has a baker's dozen of instant landscaping rules, from plant acquisition to big-tree moving, to maintenance. And, he says, each procedure is based on the mandate that you shouldn't be able to tell the plant or tree was moved into the space.

"Acquisition of healthy, pest-free plant material can make or break a project, financially and aesthetically," says Higbie. "Plant acquisition sets the "instant landscaper" apart from his or her counterpart in other disciplines. If what we need is not available *right now,* putting on a third shift won't solve the problem."

Higbie's approach to plant spacing involves intentionally over-planting certain portions of projects to hasten the desired look and provide specimens for future use.

"Once you have an instant landscape," says Higbie, "follow-up care is the most critical aspect." Crews keep daily tabs of plant vitality. Transplanted trees are immediately guyed, fertilized, watered three times at installation, and as needed thereafter.

The landscape division of Disney World is expert when it comes to moving big trees. The time required to prepare and move a tree can be anywhere from three days to three years, and what happens during the move is crucial to the tree's lifespan.

Elements of timing

● Deciduous trees should be dormant or in period of least active growth. Spring is recommended for evergreens, when soil is warm.

● However, timing is often based on installation schedules, tree availability, operational demands.

● Trees received bare root may be boxed or held until a later date.

● "Know" the tree, understand growth principles, and observe to let you know when a specimen may be moved without harm.

Which tree moving method to choose? Size, type, present location and future location are the elements to consider. Disney uses these:

1) Balling and burlapping method

a. The size of the root ball is determined and marked.

b. A trench is dug, and the ball formed, using a balling spade, a sharp, flat tool.

c. Large roots are cut with a pruner or saw.

d. The ball is tapered inwards towards the bottom, wrapped with burlap. Nails hold burlap in place.

e. The wrapped ball is secured with poultry wire.

f. If the tree is not going to moved immediately, the hole should be filled with sawdust.

2) Cut root ball method

a. A trench is dug around the tree.

b. Tree is moved without wrapping the soil ball. The tight, fibrous root system of trees, palms and bamboos moved this way helps keep the ball together.

c. Used on specimen oaks. The oaks were root pruned in advance to encourage formation of a very dense, fibrous root system. The result was a shallow, broad root ball in excess of 14 ft. in diameter and two feet deep.

Lifting techniques

Choke strapping: Used on single-trunk palms. Not recommended for trees, as it puts tremendous pressure on the bark.

Choke strapping involves the use of a nylon strap wrapped around the trunk. Protective wrap helps prevent scarring. Even with protection, choke strapping can result in serious girdling damage if used on trees.

Barrel strapping: With this method, the tree is lifted by the root ball, and therefore does not stretch the trunk. The strength of the solid root ball supports the tree. Two wide straps are placed on either side of the root ball. They are looped through each other and then connected to leaders threaded to the top of the tree.

Saddle strapping: Like barrel strapping, saddle strapping involves lifting the tree by the root ball. The tree is lifted at an angle. Trees which must be loaded horizontally on a trailer are best lifted using saddle strapping technique.

—Terry McIver

Balling and burlapping: balling hooks tighten hog wire around soil ball. Photo courtesy Walt Disney World Co.

TABLE 1. Elements of 'instant landscaping'

- organization and planning
- installation practices
- plant acquisition
- maintenance
- plant size
- turf
- design considerations
- unique specimens
- big-tree moving
- flower beds
- spacing

TABLE 2. Adaptability of central Florida trees to transplanting

Trees which establish well after a transplant:

- elms
- maples
- queen palms
- magnolias
- oaks
- willows

Trees which require special care:

- acacias
- canary island date palms
- pine
- camphors
- eucalyptus
- photocarcus

Avoid Running Into Problems.

Announcing a turning point in mower history. The Reelmaster® 216 from Toro. It's nimble. Lightweight. And extremely maneuverable. Perfect for mowing around trees, signs, any obstacle standing in your way. And perfect for formal mowing and cutting on slopes.

For added performance, traction and versatility, the Reelmaster 216 features 3-wheel drive. Plus quick-adjusting height of cut. Options include grass catchers and a choice of front rollers that let you adapt easily to varying needs.

ALSO DIESEL AVAILABLE

The Reelmaster 216 is so easy to operate that anyone can become an expert on the first ride. One lever controls the cutting reels. One pedal controls the forward and reverse speeds and the braking. It's that simple.

For all-purpose mowing, there's nothing as agile as the Reelmaster 216 from Toro. It's a great way to steer clear of trouble. For a demonstration, call your local distributor or contact Toro at the address below.

TORO

The Professionals That Keep You Cutting.

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Circle No. 123 on Reader Inquiry Card

GREEN INDUSTRY SHOWCASE

Pre- and post-emergence nutsedge control

One of the most damaging landscape weeds is nutsedge. Nutsedge is difficult to control because it is common and very hardy. Nutsedge may lie dormant for years and then suddenly overtake a landscape.

Nutsedge reproduces by means of nutlets. Dr. Elton Smith, landscape and horticulture extension specialist at Ohio State University says nutlet dormancy is hard to predict. "That makes control difficult, because you never know where or when nutsedge will pop up," says Smith.

Smith prefers pre-emergence herbicides for most landscape situations. "With ornamentals already planted," advises Smith, "It probably makes more sense to use a pre-emergence product because it won't damage the plants you want to keep.

To remove nutsedge by hand, the entire plant must be removed. But that takes time—time many landscape companies don't have.

Joe Angel, a landscape project manager for Budd Services in Winston-Salem, N.C., often confronts nutsedge on large corporate properties.

Pre-emergence applications gives ornamentals a fighting chance against weeds.

Angel encountered a nutsedge problem on the Ciba-Geigy headquarters in Greensboro, N.C. He tried Ciba-Geigy's Pennant herbicide, which he found cut his crew's weeding time by 60 to 70 percent.

Post-emergence products are also an answer. Smith says Roundup and Basagran T/O are two that work, but they are most effective if applied when weeds are young.

"You should be extremely careful that these products don't get too close to desirable ornamentals," warns Smith.

Steve Hellwege, spray division manager at Top Care Lawn Service in St. Louis, Mo., prefers pre-emergence control. "It gives ornamentals a fighting chance against the weeds, which compete for light, space and nutrients, and it cuts down on our labor because we minimize our hand-weeding," explains Hellwege. "We don't have to worry about weeds popping up in between property visits when we use pre-emergence herbicides.

Circle No. 190 on Reader Inquiry Card

SHOWCASE PRODUCT REVIEW

Tractor serves as backhoe, loader

Kubota Tractor Corporation's new B-20 tractor is an industrial strength compact tractor that can be equipped with a full-scale backhoe and loader.

Powered by a 20-hp engine, the B-20

was specifically designed to meet the rigorous demands of front loader, backhoe, trencher and box scraper work and yet retain the versatility and maneuverability found in a compact tractor.

With its Kubota-made, liquid-cooled 3-cylinder diesel engine, the B20 features hydrostatic transmission, and standard

four-wheel drive for greater traction and power.

Circle No. 191 on Reader Inquiry Card

Hydraulic accessory swings side-to-side

The "Powertilt" Bucket and Tool Positioner from Helac Corp. of Washington state is a hydraulically pow-

ered accessory that swings buckets and tools up to 60 degrees to the left or right.

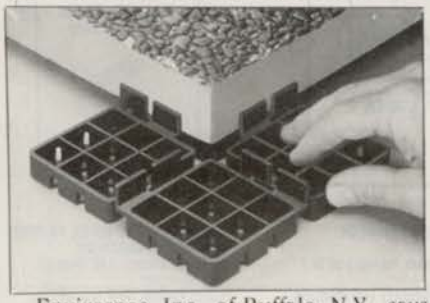
Designed for retrofit installation between the dipperstick and tool of most backhoes and excavators under 40,000 lbs. Standard buckets, 12 inches and wider, and most hydraulic tools are compatible with Powertilt.

Buckets and tools are completely interchangeable with Powertilt installed. Powertilt can expand machine dexterity to permit easier excavation under and around buried pipes, rocks, foundations or sidewalks.

Circle No. 192 on Reader Inquiry Card

Reduce space between paver stones by half

A new Pav-El pedestal reduces the spacing between paver stones by 50 percent and increases load bearing area by 48 percent.



Envirospec, Inc., of Buffalo, N.Y., says the system can be used for elevation, uniform spacing and complete drainage of paver-stones installed on roof deck areas.

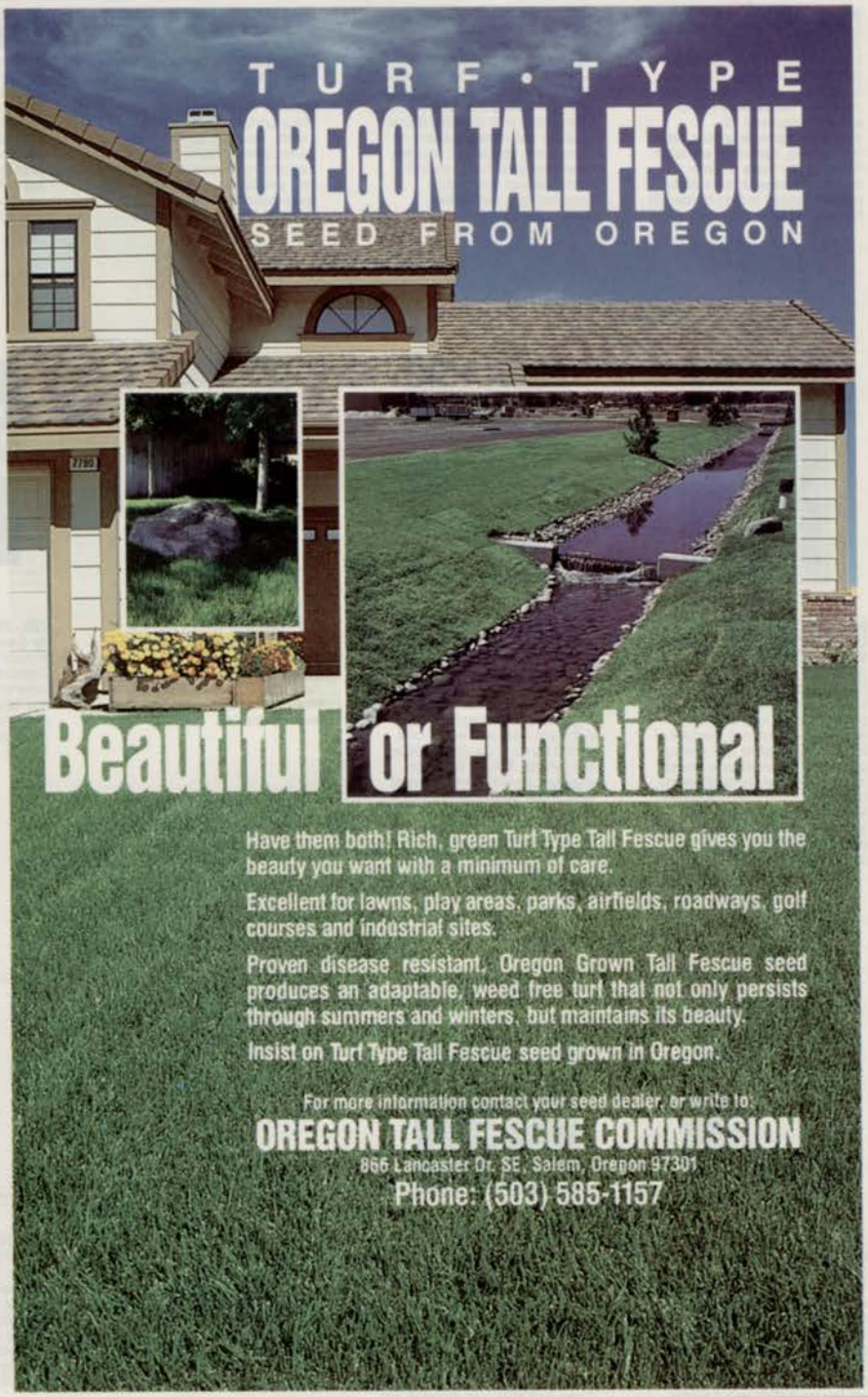
According to the company, the Model 6x was designed to meet the aesthetic and functional needs of architects, roofing contractors and building owners for narrower openings between paverstones.

Circle No. 193 on Reader Inquiry Card

Dump trailer hauls 20 cubic feet of cargo

A new dump trailer from Cushman hauls up to 20 cubic feet of cargo, and can be used with the Cushman Turf-Truckster.

Because of the fifth wheel configura-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Excellent for lawns, play areas, parks, airfields, roadways, golf courses and industrial sites.
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Insist on Turf Type Tall Fescue seed grown in Oregon.
For more information contact your seed dealer, or write to:
OREGON TALL FESCUE COMMISSION
866 Lancaster Dr. SE, Salem, Oregon 97301
Phone: (503) 585-1157
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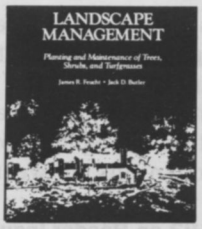
BOOKSTORE

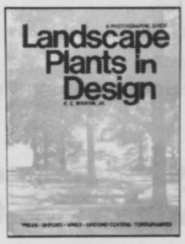
345 - KERR'S COST DATA FOR LANDSCAPE CONSTRUCTION 1991
By Norman L. Dietrich
Eleventh edition. Provides all the pricing data you need in one convenient source. 28 major sections cover site, recreation and landscape development, 65 subsections provide specific data on materials, equipment and labor. Will save you hours on time-consuming research and calculations. Organized in easy-to-use CSI format. **$44.95**

300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH
by Leroy Hannebaum
Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **$54.95**



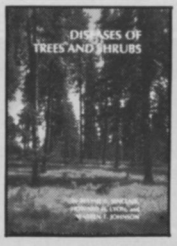
305 - LANDSCAPE MANAGEMENT
by James R. Feucht and Jack D. Butler
Planting and Maintenance of Trees, Shrubs, and Turfgrasses. Describes the basic principles of cultural management of installed landscapes. The important factors of plant growth, soils and fertilizers, improved planting techniques and new pruning techniques, integrated pest and disease management, and spray-equipment calibration and care are all featured. **$35.95**

370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS
by Leroy Hannebaum
An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **$54.95**

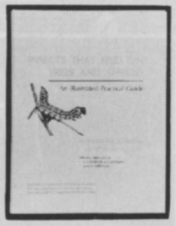


365 - LANDSCAPE PLANTS IN DESIGN
by Edward C. Martin
An annotated black & white photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in non-technical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **$69.95**

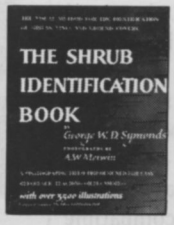
665 - ARBORICULTURE: THE CARE OF TREES, SHRUBS AND VINES IN THE LANDSCAPE
by Richard W. Harris
Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **$63.00**



430 - DISEASES OF TREES AND SHRUBS
By Wayne Sinclair, Howard Lyon and Warren Johnson
A comprehensive pictorial survey of the diseases of, as well as the environmental damage to, forest and shade trees and woody ornamental plants in the United States and Canada. Reflects the most important developments in fungal biology and taxonomy, plant bacteriology, virology, and environmentally induced stress in plants. Summarizes information about newly discovered diseases and provides up-do-date accounts of old ones. **$52.50**



690 - INSECTS THAT FEED ON TREES AND SHRUBS
by Johnson and Lyon
Essential information for identifying more than 650 insect pests and the injuries they cause. More than 200 color illustrations. **$49.95**



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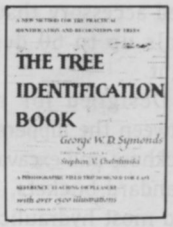

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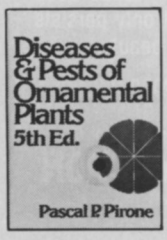

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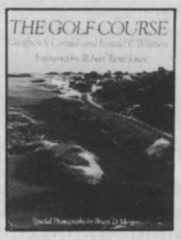

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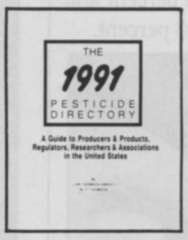

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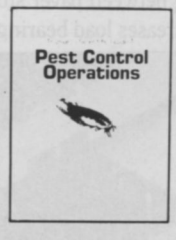

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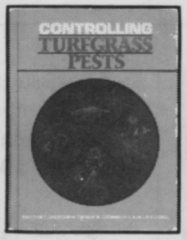

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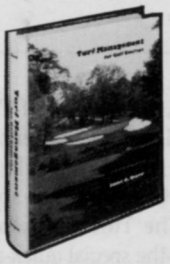

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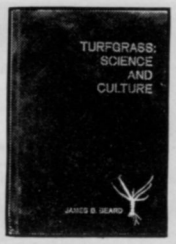

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tion, the new Turf-Truckster with Dump Trailer has excellent maneuverability for golf course and other landscape management maintenance applications.

The Turf-Truckster must be equipped with the special quick-attach fifth wheel hitch and the live hydraulics package available from Cushman. The Dump Trailer attaches to the

Turf-Truckster with a 2-inch ball hitch.

The Dump Trailer is equipped with 24-inch x 13-inch turf tires on 12-inch rims.

Circle No. 194 on Reader Inquiry Card

THE WALKER TOUCH

The Perfect Touch Many operators are finding the mid-size Walker Mower is the perfect size for their jobs – a compact, maneuverable tractor for small areas, combined with open space productivity of a rider, saves time.

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Straight blade snowplow is hinged for control

The Boss straight blade snowplow is made with a unique multi-position hinged "V" snowplow whose cab control changes the position of two independently movable blade havles, making the Boss do the work of three different kinds of fixed blade snowplows.

The "rapid-tach" system allows attachment of plow to truck in seconds without an operator crawling under the vehicle in wet and cold conditions. Disconnecting the plow for storage is easy and quick.

The plow is backed by a two-year warranty. M.J. Electric of Iron Mountain, Mich. is the manufacturer.

Circle No. 195 on Reader Inquiry Card

Grass collection system will carry 17 bushels

Ford-New Holland has a new grass collection system for its CM224 and

CM274 commercial mowers that features a 17-bushel hopper with a 73-inch dump height.

The blower impeller is driven from the right-hand mower spindle.

Clippings and leaves are delivered to the hopper by way of a see-through tube.

The hopper is hydraulically dumped from the operator's seat. Dump height is ample for discharge into trailers or pickup trucks.

The new collectors are designed to simplify yard waste removal and minimize operating time for grounds keepers and commercial lawn care operators.

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Interlocking timbers easy to install

DesignWood interlocking timbers make it easy for landscape contractors to build unique planter boxes, borders, retaining walls and other backyard projects.

The patent-pending system uses 4x4 and 6x6 timbers, with pre-cut, pre-drilled interlocking ends. Pegs hold the timbers together, and two or three timbers can be connected at a joint.

Thompson Industries of Russellville, Ark., says the the timbers are made of southern pine, pressure-treated with Wolman preservative and Wolman Extra water repellent additive.

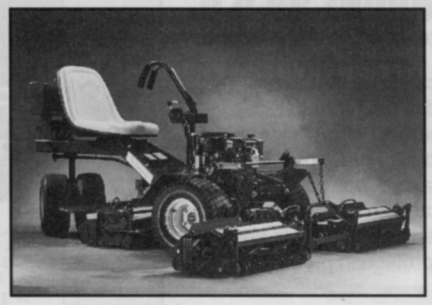
Circle No. 197 on Reader Inquiry Card

Mower system features 72-inch swath

National Mower Co. of St. Paul, Minn., is in full production of a new 72-inch mower system with floating out-front reels.

The TAC-1 features an extremely tight turning radius and three newly-designed mowing units.

National says the mower lets operators make easy cuts around tricky bunkers and traps, without scalping. Each floating unit is cradled by a grooved front roller and a steel rear roller. In addition, National uses



its proven "scissor" suspension system to to hang the two out-front units. This independent suspension system lets the cutting units flex to extreme, contour-hugging limits.

Circle No. 198 on Reader Inquiry Card

Vacuum picks up fine chemical dust, powder

Nilfisk of America's portable GS 81 vacuum cleaner is being used by landscape managers for safe and effective cleanup of fine powders and dust which fill the air during mixing, storage and spreading of pesticides.

The Nilfisk GS 81 is equipped with a special High Efficiency Particulate Air Filter, and is capable of capturing 99.97 percent of particles down to 0.3 microns in size.

The vacuum can be equipped with polyliners so that spilled powder can be disposed of or re-used. In addition to collecting spilled powder, the vacuum cleaner should be used to clean loose powder which often attaches itself to workers' clothing.

Circle No. 200 on Reader Inquiry Card

Power shovel attaches easily to skid-steers

The Speedy Spade from Oregon Excavating Equipment is called an ideal tool for planting, trenching, tree and stump removal, penetrating frozen ground and breaking through roots.

The company says the spade eliminates the need for auxiliary hydraulics.

The shovel digs from a stationary position, and allows the operator to eliminate manual labor, even on smaller, delicate jobs.

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Keep tools together with nylon carrier

The Bucket Boss is a nylon tool carrier that fits around a 5-gallon bucket, to make tool toting easier and more organized.

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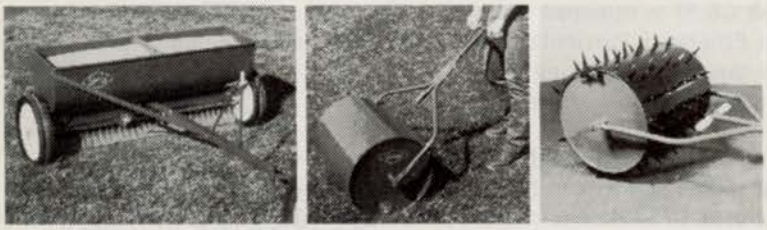

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October's Reader Inquiry Card is located on page 57.

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My primary business at this location is: (Check only one in either A, B, or C)

A. LANDSCAPE/GROUND CARE AT ONE OF THE FOLLOWING TYPES OF FACILITIES:

0005 ☐ Golf courses
0010 ☐ Sports complexes
0015 ☐ Parks
0020 ☐ Rights-of-way maintenance for highways, railroads & utilities
0025 ☐ Schools, colleges & universities
0030 ☐ Industrial & office parks/plants
0045 ☐ Condominiums/apartments/housing developments/hotels/resorts
0050 ☐ Cemeteries/memorial gardens
0060 ☐ Military installations & prisons
0065 ☐ Airports
0070 ☐ Multiple government municipal facilities
☐ Other type of facility (specify) _____

B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:

0105 ☐ Landscape contractors (Installation & maintenance)
0110 ☐ Lawn care service companies
0112 ☐ Custom chemical applicators
0125 ☐ Landscape architects
0135 ☐ Extension agents/consultants for horticulture
☐ Other contractor or service (specify) _____

C. SUPPLIERS

0205 ☐ Sod growers
0210 ☐ Dealers, distributors
☐ Other supplier (specify) _____

2. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR TITLE? (Check only one)

10 ☐ EXECUTIVE/ADMINISTRATOR—President, owner, partner, director, general manager, chairman of the board, purchasing agent, director of physical plant
20 ☐ MANAGER/SUPERINTENDENT—Landscape/ground manager, superintendent, foreman, supervisor
30 ☐ GOVERNMENT OFFICIAL—Government commissioner, agent, other government official
40 ☐ SPECIALIST—Arborist, forester, architect, consultant, agronomist, pilot, instructor, researcher, horticulturalist, certified specialist
50 ☐ OTHER TITLED AND NON–TITLED PERSONNEL (specify) _____

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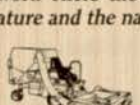

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